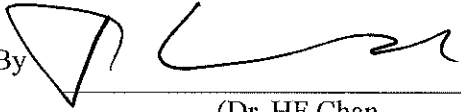


Civil Engineering and Development Department

**Agreement No. CE 59/2015 (EP)
Environmental Team for
Tseung Kwan O – Lam Tin Tunnel
Design and Construction**

**Monthly Environmental Monitoring and
Audit Report for
December 2021
(version 1.0)**

Approved By 
(Dr. HF Chan,
Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

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Civil Engineering and Development Department
East Development Office
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11 Hoi Ting Road
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Kowloon

Your reference:

Our reference: HKCEDD08/50/107791

Date: 19 January 2022

Attention: Mr Raymond Chan

BY FAX & POST
(Fax no.: 2739 0076)

Dear Sirs

Agreement No.: NTE 06/2016
Independent Environmental Checker for Tseung Kwan O – Lam Tin Tunnel
Monthly Environmental Monitoring and Audit Report for December 2021 (version 1.0)

We refer to emails of 14 and 18 January 2022 from Cinotech Consultants Limited attaching the Monthly Environmental Monitoring and Audit Report for December 2021 (version 1.0).

We have no further comment and hereby verify the captioned report in accordance with Clause 4.4 of the Environmental Permit no. EP-458/2013/C.

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Edric Lau on 2618 2831.

Yours faithfully
ANewR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LCCR/LTKE/lsm

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EXECUTIVE SUMMARY

Introduction

1. This is the 62nd Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the “Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel – Design and Construction” (hereinafter called “the Project”). This report documents the findings of EM&A Works conducted in November 2021.
2. During the reporting month, the following works contracts were undertaken:
 - Contract No. NE/2015/01 – Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works;
 - Contract No. NE/2015/02 – Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works;
 - Contract No. NE/2015/03 – Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge;
 - Contract No. NE/2017/01 – Tseung Kwan O – Lam Tin Tunnel –Tseung Kwan O Interchange and Associated Works
 - Contract No. NE/2017/02 – Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works.
 - Contract No. NE/2017/06 – Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance System(TCSS) and Associated Works
 - Contract No. NE/2017/07 – Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works.

Environmental Monitoring Works

3. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
4. Summary of the non-compliance (exceedance) in the reporting month for the Project is tabulated in **Table I**.

Table I Non-compliance (exceedance) Record for the Project in the Reporting Month

Environmental Monitoring	No. of Non-compliance (Exceedance)		No. of Non-compliance (Exceedance) due to Construction Activities of this Project		Action Taken
	Action Level	Limit Level	Action Level	Limit Level	
Air Quality	0	0	0	0	Refer to Appendix K
Noise	0	0	8	0	Refer to Appendix K & O
Marine Water Quality	20	46	0	0	Refer to Appendix K
Groundwater Level Monitoring (Piezometer Monitoring)	0	N/A ¹	0	N/A ¹	N/A
Ecological	N/A	N/A	N/A	N/A	N/A
Cultural Heritage	0	0	0	0	N/A
Landfill Gas	0	0	0	0	N/A

Note:(1) No Limit Level for Groundwater Level Monitoring (Piezometer Monitoring).

Air Quality Monitoring

5. No Action/Limit Level exceedance for 1-hour TSP monitoring was recorded.
6. No Action Level exceedance for 24-hour TSP monitoring was recorded.
7. No Limit Level exceedances for 24-hour TSP monitoring was recorded.

Construction Noise Monitoring

8. Eight (8) Action Level exceedance was recorded due to documented complaints in the reporting month. The Summary of Documented Complaints in Reporting Month is tabulated in **Table III**.
9. No Limit Level exceedance was recorded due to monitoring results in this reporting month.

Water Quality Monitoring

10. Groundwater quality monitoring had been suspended since October 2019 upon the agreement by EPD. Further details should be founded at **Section 5.1**.
11. All marine water quality monitoring was conducted as scheduled in the reporting month. There were twenty (20) Action Level and forty-six (46) Limit Level exceedances recorded in Monitoring Stations (M) during marine water quality monitoring. During this reporting month, no sand plume was observed during the water quality monitoring and site audits, therefore there is no direct evidence that the recent exceedances were due to the construction works of the Project. Details of this investigation are presented in **Section 5**. Daily silt curtain inspection and weekly diving inspection have been carried out by contractor, the record, as reviewed by the site auditors, indicated that silt curtains were found in good conditions.

12. Since the all marine works are completed at November 2021, the post reclamation marine water quality monitoring was initiated from December 2021. The monitoring location is presented in **Figure 9** while the monitoring results shall be referred to **Appendix W**.
13. Construction phase daily piezometer monitoring by the Contractor commenced in June 2018. It has switched to monthly basis since 3 October 2018 as the construction activity was 120m away from the piezometer gate. No monitoring was conducted in the reporting month.

Ecological Monitoring

14. Post-translation coral monitoring survey shall be conducted once every 3 months for a period of 12 months after completion of coral translocation. The post-translocation coral monitoring surveys were completed in November 2017.

Monitoring on Cultural Heritage

15. Monitoring of impacts on Cultural Heritage at Cha Kwo Ling Tin Hau Temple commenced in May 2017. No Alert, Alarm and Action (AAA) Level exceedance was recorded in the reporting month.

Landscape and Visual Monitoring and Audit

16. The implementation of landscape and visual mitigation measures was checked during the environmental site inspections. Recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in Section 10.

Landfill Gas Monitoring

17. Monitoring of landfill gases commenced in December 2016 and were carried out by the Contractor at excavation location, Portion III. No Limit Level exceedance was recorded.

Environmental Site Inspection

18. Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. The representative of the IEC joined the site inspection for NE/2015/01 and NE/2017/07 on 22 December 2021 & NE/2015/02, NE/2017/01, NE/2017/02 and NE/2017/06 on 30 December 2021 respectively. Details of the audit findings and implementation status are presented in **Section 10**.

Waste Management

19. Wastes generated from this Project include inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediment. Details of waste management data is presented in **Section 11** and **Appendix P**.

Key Information in the Reporting Month

20. Summary of key information in the reporting month is tabulated in **Table II**

Table II Key Information in the Reporting Month

Monthly Complaints	Event Details		Action Taken	Status
	Number	Nature		
December 2021	8	Noise	Details refer to App O	On-going/Closed
November 2021	7	Noise	Details refer to App O	Closed
October 2021	3	Noise / Odour / Water	Details refer to App O	Closed
September 2021	6* ¹	Air / Noise	Details refer to App O	Closed / Draft CIRs submitted
August 2021	3	Noise	Details refer to App O	Closed
July 2021	3	Noise / Working Hours	Details refer to App O	Closed
June 2021	3	Light/ Water/ Working Hours	Details refer to App O	Closed
May 2021	3	Air / Noise	Details refer to App O	Closed
April 2021	13* ²	Noise	Details refer to App O	Closed
Notifications of any summons & prosecutions received	0	---	N/A	N/A

*1: 1 complaint at September 2021 was received at early October 2021.

*2: 1 complaint at April 2021 was received at early May 2021.

21. Summary of complaints received in the reporting month is tabulated in **Table III**.

Table III Summary of Complaints Details in Reporting Month

Complaint No.	Complaint	Investigation Findings	Follow-up Action / Mitigation Measure
Lam Tin Side			
577, 580, 582	Resident of Yau Lai Estate / Anonymous	Investigation undergoing	
584	Resident of Yau Lai Estate		
Tseung Kwan O Side			
578, 581	Resident of Ocean Shores	The complaint is considered as project-related. Amour rocking unloading was conducted during the time of complaint. No non-compliance was found. The details shall be referred to CIR-N157	The Contractor is reminded to strictly follow the conditions listed in CNP. In addition, the contractor shall reduce the dropping height of amour rocks to reduce noise nuisance to the surroundings.
579		The complaint is considered as project-related. Various construction activities were conducted during the time of complaint. Acoustic box was used for the breaker. No non-compliance was found. The details shall be referred to CIR-N157	The Contractor is reminded to strictly follow CNMP and apply relevant noise mitigation measures. Moreover, the Contractor is suggested to repair any damaged noise barrier or acoustic box.
583		The complaint is considered as project-related. The barges were used for installing pair segment between 1900 and 2000. Afterwards, only the lights were turned on for safeguarding throughout the rest of the night. The details shall be referred to CIR-N157	The Contractor is reminded to strictly follow the conditions listed in CNP

Key Construction Work in the reporting month & the next reporting month

22. Summary of key construction work in the reporting month is tabulated in **Table IV**.

Table IV Summary Table for Key Construction Work in the Reporting Month

Contract No.	Project Title	Site Activities (December 2021)	
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation Area 1G1 & 1G2 & 5 3) Site Formation Area 2 4) Site Formation Slope Stabilization 5) Site Formation Retaining Wall 6) Administration Building 7) West Ventilation Building 8) Bridge Construction 9) Emergency Stormwater Storage Tank + Stormwater Pumping Station 10) S01_2, EHC1&4 Construction 11) CKLR Underground Utilities 12) Underpass S01 13) Landscape Deck 14) LTI Drainage 15) Road EHC4 Site Formation Works
		Main Tunnel	16) Main Tunnel Lining Works 17) S02_2 Excavation & Lining
		TKO Interchange	18) Bridge Construction 19) East Ventilation Building 20) Underground Utilities / Drainage Works
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Sloping Seawall Construction 2) Construction of U-trough 3) Construction of Seawall Coping 4) Construction of Road P2 and SR2	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	The construction works under the contract had been completed in December 2019. The EM&A works were terminated in late April 2020.	
NE/2017/01	Tseung Kwan O – Lam Tin Tunnel – Tseung Kwan O Interchange and Associated Works	1) Installation of Parapet Skin 2) Construction of Profile barrier 3) Grouting Works 4) Installation of Traffic Sign Gantry 5) Installation of Road Drainage and Drain Pipe	
NE/2017/02	Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works	1) Inspection pit excavation and utility diversion works 2) Construction of drainage and watermain 3) Asphalt Paving 4) Pier, Staircase and Lift Shaft Construction 5) Road Works	
NE/2017/06	Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance System(TCSS) and Associated Works	1) Goods arrival & storage on site 2) Installation in Admin Building 3) Installation works inside Tunnel	
NE/2017/07	Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works	1) Precast shell fabrication with 17 out of 17nos. had completed for Portion I 2) Precast Segment Fabrication with 205 out of 236 nos. 3) Predrilling Work at Portion I had completed with 35 out of 35 nos. 4) Piling work at Portion I had completed with 33 out of 35 nos. 5) Precast Shell Installation with 7 out of 17 nos. had completed at portion II	

Contract No.	Project Title	Site Activities (December 2021)
		6) 2nd Stage Concrete for pile caps is 14 out of 14 nos. had completed at Portion II 7) Precast Box Girder Installation with 18 out of 18 nos. had completed at Portion II 8) Fabrication of deck segment panel steel completed 9) E&M Work and External Work at Portion V Plant Room Building are In-progress SE 4-5 to SE 6-7 10) 1 st , 2 nd , 3 rd and 4 th round deck segment assembly completed 11) Fabrication of arch rib panels (S690QL) steel completed. 12) 1 st , 2 nd , 3 rd and 4 th round arch rib segment assembly 13) Loadout, transportation and floating-in of steel bridge side span

Future Key Issues

23. The future key environmental issues in the coming month include:

Table V Summary Table for Site Activities in the next Reporting Period

Contract No. and Project Title	Site Activities (January 2022)	Key Environmental Issues *	
NE/2015/01 - Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation Area 1G1 & 1G2 & 5 3) Site Formation Area 2 4) Site Formation Slope Stabilization 5) Site Formation Retaining Wall 6) Administration Building 7) West Ventilation Building 8) Bridge Construction 9) Emergency Stormwater Storage Tank & Stormwater Pumping Station 10) S01_2, EHC1&4 Construction 11) CKLR Underground Utilities 12) Underpass S01 13) Landscape Deck 14) LTI Drainage	(A) / (B) / (C) / (D) / (E) / (G)
	Main Tunnel	15) S02_2 Excavation & Lining 16) Main Tunnel Lining Works 17) Branch Tunnel Lining Works	(B)
	TKO Interchange	18) Bridge Construction 19) East Ventilation Building 20) Underground Utilities / Drainage Works	(A) / (C) / (D) / (E) / (F) / (I)
NE/2015/02 - Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Sloping Seawall Construction 2) Construction of U-trough 3) Construction of Seawall Coping 4) Construction of Road P2 and SR2	(A) / (B) / (C) / (D) / (E) / (G) / (I)	
NE/2015/03 - Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	The construction works under the contract had been completed in December 2019. Materials are being removed from works area.	N/A	
NE/2017/01 – Tseung Kwan O Interchange and Associated Works	1) Installation of Parapet Skin 2) Construction of Profile barrier 3) Grouting Works 4) Installation of Traffic Sign Gantry 5) Installation of Road Drainage and Drain Pipe	(A) / (B) / (E) / (F) / (G)	
NE/2017/02 – Tseung Kwan O - Lam Tin Tunnel - Road P2/D4 and Associated Works	1) Inspection pit excavation and utility diversion works 2) Construction of drainage and watermain 3) Asphalt Paving 4) Pier, Staircase and Lift Shaft Construction	(A) / (B) / (E) / (F) / (G)	

Contract No. and Project Title	Site Activities (January 2022)	Key Environmental Issues *
	5) Road Works 6) Road Pavement and Road Marking	
NE/2017/06 – Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance System(TCSS) and Associated Works	1) Goods arrival & storage on site 2) Installation in Admin Building 3) Installation works inside Tunnel	(E)
NE/2017/07 - Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works	1) Top, transverse, bottom and external tension 2) Construction of long stitching 3) Construction of concrete structure above deck 4) Construction of steel-concrete transition zone 5) Bored piling 6) Pile cap construction 7) Pier construction 8) Erection for bridge segment	(A) / (B) / (D) / (E) / (F) / (G) / (H) / (I)

Note:

- (A) Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- (B) Noisy construction activity such as rock-breaking activities and piling works;
- (C) Runoff from exposed slope or site area;
- (D) Wastewater and runoff discharge from site;
- (E) Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
- (F) Set up and implementation of temporary drainage system for the surface runoff;
- (G) Storage of chemicals/fuel and chemical waste/waste oil on site;
- (H) Accumulation and storage of general and construction waste on site; and
- (I) Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation

1. INTRODUCTION

- 1.1 Cinotech Consultants Limited (Cinotech) was commissioned by Civil Engineering and Development Department (CEDD) as the Environmental Team (ET) to undertake environmental monitoring and auditing services for the Works Contracts involved in the implementation of Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) project to ensure that the environmental performance of the Works Contracts comply with the requirements specified in the Environmental Permit (EP), Environmental Monitoring & Audit (EM&A) Manual, Environmental Impact Assessment (EIA) Report of the TKO-LTT project and other relevant statutory requirements. This is the 62nd Monthly EM&A report summarizing the EM&A works for the Project in December 2021.

Purpose of the Report

- 1.2 This is the 62nd Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in December 2021.

Structure of the Report

- 1.3 The structure of the report is as follows:

Section 1: **Introduction** – purpose and structure of the report.

Section 2: **Contract Information** – summarises background and scope of the Contract, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting month.

Section 3: **Air Quality Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 4: **Noise Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 5: **Water Quality Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 6: **Ecological Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and Action and Limit Levels, monitoring results and Event / Action Plans.

Section 7: **Cultural Heritage** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and monitoring results.

Section 8: **Landscape and Visual Monitoring Requirements** – summarises the requirements of landscape and visual monitoring

Section 9: **Landfill Gas Monitoring** – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, monitoring results and Limit Levels and Action Plan

Section 10: **Environmental Site Inspection** – summarises the audit findings of the weekly site inspections undertaken within the reporting month.

Section 11: **Waste Management** – summarises the waste management data in the reporting month.

Section 12: **Environmental Non-conformance** – summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting month.

Section 13: **Future Key Issues** – summarises the impact forecast and monitoring schedule for the next three months.

Section 14: **Conclusions and Recommendation**

2. PROJECT INFORMATION

Background

- 2.1 In 2002, Civil Engineering and Development Department (CEDD) commissioned an integrated planning and engineering study under Agreement No. CE 87/2001 (CE) “Further Development of Tseung Kwan O – Feasibility Study” (the “TKO Study”) to formulate a comprehensive plan for further development of TKO New Town. It recommended to further develop TKO to house a total population of 450,000 besides the district’s continuous commercial and industrial developments.
- 2.2 At present, the Tseung Kwan O Tunnel is the main connection between Tseung Kwan O (TKO) and other areas in the territory. To cope with the anticipated transport need, the TKO Study recommended the provision of Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) (hereinafter referred to as “the Project”) and Cross Bay Link (CBL) to meet the long-term traffic demand between TKO and the external areas. The site layout plan for the Project is shown in **Figure 1**. CBL was also entrusted with part of the marine viaducts near Tseung Kwan O Interchange since the commencement of the CBL project the December 2018.
- 2.3 The Environmental Impact Assessment (EIA) Report for the TKO-LTT project was approved under the Environmental Impact Assessment Ordinance (EIAO) in July 2013. The corresponding Environmental Permit (EP) was issued in August 2013 (EP no.: EP-458/2013). Variations to the EP was applied and the latest EP (EP no.: EP-458/2013/C) was issued by the Director of Environmental Protection (DEP) in January 2017.
- 2.4 The commencement dates of construction of this Project are:
- Contract No. NE/2015/01 and Contract No. NE/2015/02: 7 November 2016.
 - Contract No. NE/2015/03: 29 May 2017.
 - Contract No. NE/2017/02: 15 March 2018.
 - Contract No. NE/2017/01: 23 May 2018.
 - Contract No. NE/2017/06: 09 November 2018.
 - Contract No. NE/2017/07: 22 February 2021

Project Organizations

- 2.5 Different parties with different levels of involvement in the project organization include:
- Project Proponent – Civil Engineering and Development Department (CEDD)
 - The Engineer and the Engineer’s Representative (ER) – AECOM
 - Environmental Team (ET) – Cinotech Consultants Limited (Cinotech)
 - Independent Environmental Checker (IEC) – AnewR Consulting Limited (AnewR)

2.6 The key contacts of the Project are shown in **Table 2.1**.

Table 2.1 Key Project Contacts

Party	Role	Contact Person	Phone No.	Fax No.
CEDD	Project Proponent	Mr. LO Sai Pak, Sunny	2301 1384	2739 0076
AECOM	Engineer's Representative	Mr. Jackie CW, Ng	3910 1601	3910 1600
Cinotech	Environmental Team	Dr. HF Chan	2151 2088	3107 1388
		Mr. KS Lee	2151 2091	
AnewR	Independent Environmental Checker	Mr. James Choi	2618 2836	3007 8648

Construction Activities undertaken during the Reporting Month

2.7 The major site activities undertaken in the reporting month included:

Table 2.2 Summary Table for Major Site Activities in the Reporting Month

Contract No.	Project Title	Site Activities (December 2021)	
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation Area 1G1 & 1G2 & 5 3) Site Formation Area 2 4) Site Formation Slope Stabilization 5) Site Formation Retaining Wall 6) Administration Building 7) West Ventilation Building 8) Bridge Construction 9) Emergency Stormwater Storage Tank + Stormwater Pumping Station 10) S01_2, EHC1&4 Construction 11) CKLR Underground Utilities 12) Underpass S01 13) Landscape Deck 14) LTI Drainage 15) Road EHC4 Site Formation Works
		Main Tunnel	16) Main Tunnel Lining Works 17) S02_2 Excavation & Lining
		TKO Interchange	18) Bridge Construction 19) East Ventilation Building 20) Underground Utilities / Drainage Works
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Sloping Seawall Construction 2) Construction of U-trough 3) Construction of Seawall Coping 4) Construction of Road P2 and SR2	
NE/2015/03	Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	The construction works under the contract had been completed in December 2019. The EM&A works were terminated in late April 2020.	
NE/2017/01	Tseung Kwan O – Lam Tin Tunnel – Tseung Kwan O Interchange and Associated Works	1) Installation of Parapet Skin 2) Construction of Profile barrier 3) Grouting Works 4) Installation of Traffic Sign Gantry 5) Installation of Road Drainage and Drain Pipe	
NE/2017/02	Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and Associated Works	1) Inspection pit excavation and utility diversion works 2) Construction of drainage and watermain 3) Asphalt Paving 4) Pier, Staircase and Lift Shaft Construction	

Contract No.	Project Title	Site Activities (December 2021)
		5) Road Works
NE/2017/06	Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance System(TCSS) and Associated Works	1) Goods arrival & storage on site 2) Installation in Admin Building 3) Installation works inside Tunnel
NE/2017/07	Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works	1) Precast shell fabrication with 17 out of 17nos. had completed for Portion I 2) Precast Segment Fabrication with 205 out of 236 nos. 3) Predrilling Work at Portion I had completed with 35 out of 35 nos. 4) Piling work at Portion I had completed with 33 out of 35 nos. 5) Precast Shell Installation with 7 out of 17 nos. had completed at portion II 6) 2nd Stage Concrete for pile caps is 14 out of 14 nos. had completed at Portion II 7) Precast Box Girder Installation with 18 out of 18 nos. had completed at Portion II 8) Fabrication of deck segment panel steel completed 9) E&M Work and External Work at Portion V Plant Room Building are In-progress SE 4-5 to SE 6-7 10) 1 st , 2 nd , 3 rd and 4 th round deck segment assembly completed 11) Fabrication of arch rib panels (S690QL) steel completed. 12) 1 st , 2 nd , 3 rd and 4 th round arch rib segment assembly 1) Loadout, transportation and floating-in of steel bridge side span

2.8 The construction programme showing the inter-relationship with environmental protection/mitigation measures are presented in **Table 2.3**.

Table 2.3 Construction Programme Showing the Inter-Relationship with Environmental Protection/Mitigation Measures

Construction Works	Major Environmental Impact	Control Measures
As mentioned in Table 2.2	Noise, dust impact, water quality and waste generation	<ul style="list-style-type: none"> • Sufficient watering of the works site with active dust emitting activities • Properly cover the stockpiles • On-site waste sorting and implementation of trip ticket system • Appropriate desilting/sedimentation devices provided on site for treatment before discharge • Use of quiet plant and well-maintained construction plant • Provide movable noise barrier

Status of Environmental Licences, Notification and Permits

2.9 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 2.4**.

Table 2.4 Summary of the Status of Environmental Licences, Notification and Permits

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Environmental Permit (EP)				
N/A	EP-458/2013/C	20/1/2017	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation				
NE/2015/01	EPD Ref no.: 405305	21/07/2016	N/A	Valid
	EPD Ref no.: 405582	28/07/2016	N/A	Valid
NE/2015/02	EPD Ref no.: 406100	12/08/2016	N/A	Valid
NE/2015/03	EPD Ref no.: 416072	26/04/2017	N/A	Valid
NE/2017/02	EPD Ref no.: 429867	19/01/2018	N/A	Valid
NE/2017/01	EPD Ref no.: 430070	25/01/2018	N/A	Valid
NE/2017/06	EPD Ref no.: 461507	03/11/2020	N/A	Valid
Billing Account for Construction Waste Disposal				
NE/2015/01	Account No. 7025431	11/07/2016	N/A	Valid
NE/2015/02	Account No. 7025654	16/08/2016	N/A	Valid
NE/2015/03	Account No. 7026805	30/12/2016	N/A	Valid
NE/2017/02	Account No. 7029651	22/12/2017	N/A	Valid
NE/2017/01	Account No. 7029994	01/02/2018	N/A	Valid
NE/2017/06	Account No. 7032520	22/11/2018	N/A	Valid
NE/2017/07	Account No. 7031412	24/07/2018	N/A	Valid
Registration of Chemical Waste Producer				
NE/2015/01	Waste Producer No. 5218-290-L2881-02	22/08/2016	N/A	Valid
	Waste Producer No. 5213-833-L2532-03	22/08/2016	N/A	Valid
NE/2015/02	Waste Producer No. 5213-838-C4094-01	23/08/2016	N/A	Valid
NE/2015/03	Waste Producer No. 5213-265-W3435-04	19/07/2017	N/A	Valid
NE/2017/02	Waste Producer No. 5213-833-Z4004-04	01/02/2018	N/A	Valid
NE/2017/01	Waste Producer No. 5213-833-C4262-01	12/02/2018	N/A	Valid
NE/2017/07	Waste Producer No. 5213-839-C1232-19	28/08/2018	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance				
NE/2015/01	WT00027354-2017	22/03/2017	31/03/2022	Valid
	WT00027405-2017	22/03/2017	31/03/2022	Valid
	WT00028495-2017	11/08/2017	31/08/2022	Valid
NE/2015/02	WT00026386-2016	15/12/2016	31/12/2021	Valid

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
	WT00027226-2017	23/02/2017	28/02/2022	Valid
	WT00030654-2018	16/04/2018	30/04/2023	Valid
NE/2015/03	WT00027295-2017	20/03/2017	31/03/2022	Valid
NE/2017/01	WT00030711-2018	11/04/2018	30/04/2023	Valid
	WT00030716-2018	23/05/2018	31/05/2023	Valid
NE/2017/02	WT00030654-2018	16/04/2018	30/04/2023	Valid
NE/2017/07	WT00032842-2018	01/03/2019	31/03/2024	Valid
	WT00034178-2019	15/07/2019	31/07/2024	Valid
Construction Noise Permit (CNP)				
NE/2015/01	GW-RE0566-21	22/06/2021	21/12/2021	Valid until 21 Dec 2021
	GW-RE0966-21	04/10/2021	04/01/2022	Valid
	GW-RE1020-21	21/10/2021	20/01/2022	Valid
	GW-RE1114-21	01/12/2021	31/05/2022	Valid
	GW-RE1133-21	22/12/2021	21/03/2022	Valid
	GW-RE1206-21	14/12/2021	13/03/2022	Valid
	GW-RE1303-21	28/12/2021	27/03/2022	Valid
NE/2017/01	GW-RE0842-21	30/08/2021	15/02/2022	Valid
	GW-RE0967-21	06/10/2021	27/03/2022	Valid
	GW-RE1100-21	10/11/2021	02/05/2022	Valid
NE/2017/07	GW-RE1056-21	26/10/2021	25/02/2022	Valid
	GW-RE1201-21	02/12/2021	31/12/2021	Valid
Marine Dumping Permit				
NE/2017/01	EP/MD/21-011	N/A	N/A	N/A

Summary of EM&A Requirements

- 2.10 The EM&A programme requires construction noise monitoring, air quality monitoring, water quality monitoring, environmental site audit, etc. The EM&A requirements for each parameter are described in the following sections, including:
- All monitoring parameters;
 - Action and Limit levels for all environmental parameters;
 - Event Action Plans;
 - Environmental mitigation measures, as recommended in the Project EIA Report.
- 2.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in **Section 10** of this report.
- 2.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the monitoring parameters of the required environmental monitoring works and audit works for the Project in December 2021.

3. AIR QUALITY

Monitoring Requirements

- 3.1 According to EM&A Manual of the Project, 1-hour and 24-hour TSP monitoring are required to monitor the air quality. For regular impact monitoring, a sampling frequency of at least once in every six days shall be undertaken at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.2 Six designated monitoring stations were selected for air quality monitoring programme. **Table 3.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 3.1 Locations for Air Quality Monitoring

Monitoring Stations	Location	Location of Measurement
AM1	Tin Hau Temple	Ground Level
AM2	Sai Tso Wan Recreation Ground	Ground Level
AM3	Yau Lai Estate Bik Lai House	Rooftop (41/F)
AM4 ⁽¹⁾	Sitting-out Area at Cha Kwo Ling Village	Ground Level
AM4(A) ^{(2) (*)}	Cha Kwo Ling Public Cargo Working Area Administrative Office	Rooftop (3/F)
AM5(A) ^(*)	Tseung Kwan O DSD Desilting Compound	Ground Level
AM6(A) ^(*)	Park Central, L1/F Open Space Area	1/F

Remarks: (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

(*) Air quality monitoring at designated station AM4(24-hr TSP), AM5 and AM6 was rejected by the premise owners. Therefore, baseline and impact air quality monitoring works were carried out at alternative air quality monitoring stations AM4(A) (24-hr TSP only), AM5(A) and AM6(A) respectively.

Monitoring Equipment

- 3.3 High Volume Samplers (HVS) were used to carry out 24-hour TSP monitoring. Direct reading dust meter were also used to measure 1-hour average TSP levels. The 1-hour sampling was determined periodically by HVS to check the validity and accuracy of the results measured by direct reading method.
- 3.4 Wind data monitoring equipment was set at rooftop (about 41/F) of Yau Lai Estate Bik Lai House for logging wind speed and wind direction such that the wind sensors are clear of obstructions or turbulence caused by building. The wind data monitoring equipment is re-calibrated at least once every six months and the wind directions are divided into 16 sectors of 22.5 degrees each. The location is shown in **Figure 2**.
- 3.5 **Table 3.2** summarizes the equipment to be used in the air quality monitoring. Copies of calibration certificates are attached in **Appendix B**.

Table 3.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Calibrator	TISCH Model: TE-5025A	1
1-hour TSP Dust Meter	Sibata Model No.: LD-3B / LD-5R	5
	Met One Instruments Model No.: AEROCET-831	0
	Handheld Particle Counter Hal-HPC300 / Hal-HPC301	0
HVS Sampler	TISCH Model: TE-5170	1
	GMW Model: GS2310	5
Wind Anemometer	Davis Weather Monitor II, Model no. 7440	1
	Davis Weather Stations, Vantage Pro 2, Model No. 6152CUK	0

Monitoring Parameters and Frequency

3.6 **Table 3.3** summarizes the monitoring parameters, monitoring period and frequencies of air quality monitoring.

Table 3.3 Frequency and Parameters of Air Quality Monitoring

Monitoring Stations	Parameter	Frequency
AM1, AM2, AM3, AM4, AM5(A) and AM6(A)	1-hour TSP	3 times per 6 days
AM1, AM2, AM3, AM4(A), AM5(A) and AM6(A)	24-hour TSP	Once per 6 days

Monitoring Methodology

1-hour TSP Monitoring

Measuring Procedures

3.7 The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

(Model LD3 / LD3B / LD5R)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

(AEROCET-531)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Remove the red rubber cap from the AEROCET-531 inlet nozzle.
- Turn on the power switch that is located on the right side of the AEROCET-531.
- On power up the product intro screen is displayed for 3 seconds. The intro screen displays the product name and firmware version.
- Then the main counter screen will be displayed.
- Press the START button. Internal vacuum pump start running. After 1 minute the pump will stop and the 0.5 μ m and 5 μ m channels will show the cumulative counts of particles larger than 0.5 μ m and 5 μ m per cubic foot.
- The AEROCET-531 is now checked out and ready for use.
- To switch off the AEROCET-531 power to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, and display value and site condition were recorded during the monitoring period.

(Equipment: Hal Technology; Model no. Hal-HPC300 / Hal-HPC301)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to “ON” and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

- 3.8 The following maintenance/calibration is required for the direct dust meters:
- Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP MonitoringInstrumentation

- 3.9 High volume samplers (HVS) (TISCH Model: TE-5170 and GMW Model: GS2310) completed with appropriate sampling inlets were employed for 24-hour TSP monitoring. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).
- 3.10 The positioning of the HVS samplers are as follows:
- a horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
 - no two samplers shall be placed less than 2 meter apart

- the distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
- a minimum of 2 metres of separation from walls, parapets and penthouses is required for rooftop samplers;
- a minimum of 2 metres of separation from any supporting structure, measured horizontally is required;
- no furnace or incinerator flue is nearby;
- airflow around the sampler is unrestricted;
- the sampler is more than 20 metres from the dripline;
- any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring;
- permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
- a secured supply of electricity is needed to operate the samplers.

Operating/analytical procedures for the operation of HVS

- 3.11 Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- 3.12 For TSP sampling, fiberglass filters with a collection efficiency of > 99% for particles of 0.3µm diameter were used.
- 3.13 The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- 3.14 The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centred with the stamped number upwards, on a supporting screen.
- 3.15 The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- 3.16 The shelter lid was closed and secured with the aluminium strip.
- 3.17 The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- 3.18 After sampling, the filter was removed and sent to the HOKLAS laboratory (ALS Hong Kong) for weighing. The elapsed time will be also recorded.
- 3.19 Before weighing, all filters was equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%.

Maintenance/Calibration

- 3.20 The following maintenance/calibration is required for the HVS:
- The high volume motors and their accessories will be properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking will be made to ensure that the equipment and necessary power supply are in good working condition.
 - High volume samplers will be calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

- 3.21 No Action/Limit Level exceedance was recorded for 1-hour TSP monitoring.
- 3.22 No Action and no Limit Level exceedance was recorded for 24-hour TSP monitoring.
- 3.23 The air temperature, precipitation and the relative humidity data was obtained from Hong Kong Observatory where the wind speed and wind direction were recorded by the installed Wind Anemometer at rooftop of Yau Lai Estate Bik Lai House (41/F). The location is shown in **Figure 2**. This weather information for the reporting month is summarized in **Appendix C**.
- 3.24 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix E** and **Appendix F** respectively.
- 3.25 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Table 3.4 Major Dust Source during Air Quality Monitoring

Station	Major Dust Source
AM1 – Tin Hau Temple	Road Traffic at Cha Kwo Ling Road
AM2 – Sai Tso Wan Recreation Ground	N/A
AM3 – Yau Lai Estate Bik Lai House	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
AM4 - Sitting-out Area at Cha Kwo Ling Village	Road Traffic at Cha Kwo Ling Road
AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office	Road Traffic at Cha Kwo Ling Road
AM5(A) - Tseung Kwan O DSD Desilting Compound	Vehicle Movement within the Desilting Compound
AM6(A) - Park Central, L1/F Open Space Area	Road Traffic at Po Yap Road

4. NOISE

Monitoring Requirements

- 4.1 According to EM&A Manual of the Project, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 4.2 Noise monitoring was conducted at 8 designated monitoring stations (CM1, CM2, CM3, CM4, CM5, CM6(A), CM7(A), CM8(A)) in the reporting period. **Table 4.1** and **Figure 3** show the locations of these stations.

Table 4.1 Noise Monitoring Stations

Monitoring Stations	Locations	Location of Measurement
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	Rooftop (41/F)
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	Rooftop (41/F)
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	Rooftop (40/F)
CM4	Tin Hau Temple, Cha Kwo Ling	Ground Level
CM5	CCC Kei Faat Primary School, Yau Tong	Rooftop (6/F)
CM6(A)*	Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores	Ground Level
CM7(A)*	Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores	Ground Level
CM8(A)*	Park Central, L1/F Open Space Area	1/F

Remarks:

* Noise monitoring at designated station CM6, CM7 & CM8 was rejected by the premise owners. Therefore, baseline and impact noise monitoring works were carried out at alternative noise monitoring stations CM6(A), CM7(A) and CM8(A) respectively.

Monitoring Equipment

- 4.3 Integrating Sound Level Meter was used for impact noise monitoring. The meters are Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 4.2** summarizes the noise monitoring equipment being used. Copies of calibration certificates are attached in **Appendix B**.

Table 4.2 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	SVAN 957/ 959 / 979	5
	BSWA308 SLM	2
Calibrator	SV30A	0
	Brüel & Kjær 4231	0
	ST-120	1

4.4 **Table 4.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**. Additional weekly impact monitoring are carried out for evening time (1900 – 2300 hours) for monitoring stations CM1, CM2, CM3 & CM6(A) and night-time (2300 – 0700 hours) for monitoring stations CM1, CM2 & CM3.

Table 4.3 Frequency and Parameters of Noise Monitoring

Monitoring Stations	Parameter	Period	Frequency	Measurement
CM1	L ₁₀ (30 min) dB(A) L ₉₀ (30 min) dB(A) L _{eq} (30 min) dB(A)	0700-1900 hrs on normal weekdays	Once per week	Façade
CM2				Façade
CM3				Façade
CM4				Façade
CM5				Façade
CM6(A)				Free Field
CM7(A)				Free Field
CM8(A)				Façade
CM1	L ₁₀ (5 min) dB(A)	1900 – 0700 hrs on normal weekdays		Façade
CM2	L ₉₀ (5 min) dB(A)			Façade
CM3	L _{eq} (5 min) dB(A)		Façade	
CM6(A)	L _{eq} (5 min) dB(A)	1900 – 2300 hrs on normal weekdays	Free Field	

Monitoring Methodology and QA/QC Procedure

4.5 The monitoring procedures are as follows:

- The monitoring station was normally be at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels was adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time was set as follows:
 - frequency weighting: A
 - time weighting : Fast
 - measurement time : 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement will be more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- At the end of the monitoring period, the L_{eq}, L₉₀ and L₁₀ was recorded. In addition, noise sources was recorded on a standard record sheet.
- Noise monitoring will be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. Supplementary monitoring was provided to ensure sufficient data would be obtained.

Maintenance and Calibration

- 4.6 The microphone head of the sound level meter and calibrator was cleaned with a soft cloth at quarterly intervals.
- 4.7 The sound level meter and calibrator was checked and calibrated at yearly intervals.
- 4.8 Immediately prior to and following each noise measurement the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

- 4.9 No Limit Level exceedance during daytime was recorded due to monitoring results in this reporting month. No project-related Action/ Limit level exceedances for evening/night-time construction noise monitoring was recorded.
- 4.10 Noise monitoring results and graphical presentations are shown in **Appendix G**.
- 4.11 The major noise source identified at the noise monitoring stations are shown in **Table 4.4**.

Table 4.4 Major Noise Source during Noise Monitoring

Monitoring Stations	Locations	Major Noise Source
CM1	Nga Lai House, Yau Lai Estate Phase 1, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM4	Tin Hau Temple, Cha Kwo Ling	Road Traffic at Cha Kwo Ling Road
CM5	CCC Kei Faat Primary School, Yau Tong	Road Traffic at Yau Tong Road
CM6(A)	Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores	Road Traffic at O King Road near Ocean Shores
CM7(A)	Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores	Road Traffic at Tong Yin Street
CM8(A)	Park Central, L1/F Open Space Area	Road Traffic at Po Yap Road

- 4.12 All the Construction Noise Levels (CNLs) reported in this report were adjusted with the corresponding baseline level (i.e. Measured L_{eq} – Baseline L_{eq} = CNL), in order to facilitate the interpretation of the noise exceedance. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 4.5, 4.6 and 4.7**.

Table 4.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Station	Baseline Noise Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)	Noise Limit Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)
CM1	65.5	75
CM2	63.6	
CM3	65.6	
CM4	62.0	
CM5	68.2	70*
CM6(A)	61.9	75
CM7(A)	58.3	
CM8(A)	69.1	

(*) Noise Limit Level is 65 dB(A) during school examination periods.

Table 4.6 Baseline Noise Level and Noise Limit Level for Monitoring Stations (Evening-time & Daytime (Holiday))

Station	Baseline Noise Level, dB (A) (Evening time on all days (1900-2300 hrs) and Holidays (including Sundays) during daytime (0700-1900 hrs))	Noise Limit Level, dB (A) (Evening time on all days (1900-2300 hrs) and Holidays (including Sundays) during daytime (0700-1900 hrs))
CM1	64.4	70
CM2	62.2	
CM3	64.7	
CM6(A)	60.2	65 ¹

1. ASR B was adopted according to the EIA as traffic in the surrounding area has not been changed.

Table 4.7 Baseline Noise Level and Noise Limit Level for Monitoring Stations (Night-time)

Station	Baseline Noise Level, dB (A) (Night-time (2300 – 0700 hrs))	Noise Limit Level, dB (A) (Night-time (2300 – 0700 hrs))
CM1	14-day baseline monitoring results for the time period of impact measurement at each station would be adopted	55
CM2		
CM3		

5. WATER QUALITY

Monitoring Requirements

Groundwater Quality

- 5.1 The existing groundwater quality monitoring programme has been suspended as the monitoring results had been deemed non-representative of the impact from the project justified by two major factors: (1) influence on the monitoring results from non-project related factors, such as anthropogenic activities and natural phenomenon; and (2) large separation between the monitoring stations and works area. In addition, as no alternative locations for the groundwater quality monitoring were available, the groundwater quality monitoring has been suspended since October 2019 upon the agreement by EPD.

Marine Water Quality

- 5.2 Marine water quality monitoring was conducted three times per week at the designated monitoring stations. Monitoring took place two times per monitoring day during mid ebb and mid flood tides at three depths (1 meter from surface, mid depth and 1 meter from the bottom). For Tseung Kwan O Salt Water Intake (i.e. Station M6), water sampling and in-situ measurements was taken at the vertical level where the water abstraction point of the intake is located (i.e. approximately mid-depth level). If the water depth is less than 6m, the mid-depth measurement may be omitted. If the depth is less than 3m, only the mid-depth measurements need to be taken.
- 5.3 Duplicate in-situ measurements (Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity) and water samples (suspended solids (SS)) at each depth were monitored in accordance with the requirements in the EM&A Manual. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides were not less than 0.5m.
- 5.4 According to the Environmental Review Report (ERR) for Variations of Environmental Permit (Ref: C45-03), water quality monitoring and audit programme was implemented for monitoring of oxygen depletion (e.g. Dissolved Oxygen (DO) level) in this embayed waters during the period when the fully enclosed barrier is installed. A “Proposal for Water Quality Monitoring in Temporary Marine Embayment” has been submitted to EPD in July 2017 to propose the monitoring frequency, parameter, location, etc. EPD has no further comment on the Proposal. Since January 2020, the cofferdam has been partially removed and the seawater is no longer enclosed. Therefore, no embayment water quality monitoring is required.

Groundwater Level Monitoring (Piezometer Monitoring)

- 5.5 Daily piezometer monitoring at any time of the day shall be carried throughout the whole period when any tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan. The monitoring commenced in June 2018. It has switched to monthly basis since 3 October 2018 as the construction activity was 120m away from the piezometer gate. No monitoring was conducted in the reporting month.

Monitoring Locations

Marine Water Quality

- 5.6 A total of twelve monitoring stations are designated for the water quality monitoring program according to EM&A Manual. One additional monitoring station (W1) is designated for monitoring of oxygen depletion in the embayed waters during the period when the fully enclosed barrier is installed. In addition, an extra monitoring station (W2) was set up in December 2021 for post-reclamation marine water monitoring. The locations are also summarized in **Table 5.2**. Their locations shown on **Figure 5** with the exception of W2, which was presented in **Figure 9**.

Table 5.2 Marine Quality Monitoring Stations

Monitoring Stations	Descriptions	Coordinates	
		Easting	Northing
M1	Junk Bay Coral Site – Junk Bay near Chiu Keng Wan	844255	817565
M2	Junk Bay Coral Site – Junk Bay	844076	817087
M3	Junk Bay Coral Site – Junk Island	844491	817890
M4	Junk Bay Coral Site –Chiu Keng Wan	843209	816416
M5	Junk Bay Coral Site – Fat Tong Chau	845463	815769
M6	Tseung Kwan O Salt Water Intake	845512	817442
C1	Control Station – Southeast	844696	814773
C2	Control Station – Northwest	842873	816014
G1	Gradient Station	844418	817560
G2	Gradient Station	844290	817384
G3	Gradient Station	844488	817735
G4	Gradient Station	844967	817551
W2	Embayed Area formed by TKO-LT Tunnel Reclamation	844313	817801

Monitoring Equipment

- 5.7 For in-situ monitoring, a multi-parameter meter was used to measure Dissolved oxygen (DO) concentration, DO saturation (DO %), pH, temperature and turbidity. A sampler was used to collect water samples for laboratory analysis of SS, BOD₅, TOC, Total Nitrogen, Ammonia-N and Total Phosphate.

Dissolved Oxygen (DO) and Temperature Measuring Equipment

- 5.8 The instrument for measuring dissolved oxygen and temperature was portable and weatherproof complete with cable, sensor, comprehensive operation manuals and use DC power source. It was capable of measuring:
- a dissolved oxygen level in the range of 0-20 mg/L and 0-200% saturation; and
 - a temperature of 0-45 degree Celsius.
- 5.9 It has a membrane electrode with automatic temperature compensation complete with a cable.
- 5.10 Sufficient stocks of spare electrodes and cables were available for replacement where necessary.
- 5.11 Salinity compensation was built-in in the DO equipment.

Turbidity

- 5.12 Turbidity was measured in-situ by the nephelometric method. The instrument was portable and weatherproof using a DC power source complete with cable, sensor and comprehensive operation manuals. The equipment was capable of measuring turbidity between 0-1000 NTU. The probe cable was not be less than 25m in length.

pH

- 5.13 The instrument was consisting of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It was readable to 0.1pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 were used for calibration of the instrument before and after use.

Water Depth Detector

- 5.14 A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

Water Sampler

- 5.15 Water samples collected for laboratory analysis were stored in high density polythene bottles sample containers, with appropriate preservatives added. All sampling bottles were labelled (waterproof) with the sampling date and time, sample lot number and sampling location reference number to avoid mishandling.

Sample Container and Storage

- 5.16 Following collection, water samples for laboratory analysis were stored in high density polythene bottles, with preservative appropriately added where necessary. They will be packed in ice (cooled to 4°C without being frozen), delivered to the laboratory and analysed as soon as possible.

Calibration of In-Situ Instruments

- 5.17 All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring.
- 5.18 For the on-site calibration of field equipment, the BS 1427:1993, "Guide to Field and on-site test methods for the analysis of waters" was observed.
- 5.19 Before each round of monitoring, a zero check in distilled water was performed with the turbidity probe. The probe was then be calibrated with a solution of known NTU.
- 5.20 Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was also made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.
- 5.21 **Table 5.3** summarizes the equipment used in the water quality monitoring program. Copies of the calibration certificates of the equipment are shown in **Appendix B**.

Table 5.3 Water Quality Monitoring Equipment

Equipment	Model and Make	Qty.
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	1
Multi-parameter Water Quality System	YSI 6820-C-M	0
	Aquaread AP-2000-D	0
	YSI EXO1 Multiparameter Sondes	1
Monitoring Position Equipment	“Magellan” Handheld GPS Model GPS-320	1
Water Depth Detector	Fishfinder 140	1

Monitoring Parameters and Frequency

5.22 **Table 5.4** summarizes the monitoring parameters, monitoring period and frequencies of the water quality monitoring in the reporting period.

Table 5.4 Water Quality Monitoring Parameters and Frequency

Monitoring Stations	Parameters, unit	Depth	Frequency
Marine Water Quality			
M1 M2 M3 M4 M5 M6 C1 C2 G1 G2 G3 G4	<i>In-situ:</i> Dissolved oxygen (DO) concentration, DO saturation, turbidity, pH, temperature and salinity <i>Laboratory Testing:</i> Suspended Solids (SS)	<u>M1-M5, C1-C2, G1-G4</u> <ul style="list-style-type: none"> 3 water depths: 1m below water surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If the water depth is less than 6m, omit mid-depth sampling. <u>M6</u> <ul style="list-style-type: none"> at the vertical level where the water abstraction point of the intake is located (i.e. approximately mid-depth level) 	3 days per week / 2 per monitoring day (1 for mid-ebb and 1 for mid-flood)
W2	<i>In-situ:</i> Dissolved oxygen (DO), pH, temperature and salinity	<ul style="list-style-type: none"> 3 water depths: 1m below water surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If the water depth is less than 6m, omit mid-depth sampling. 	Once per month

Monitoring Methodology

Marine Water Quality

- 5.23 The monitoring stations were accessed using survey boat by the guide of a hand-held Global Positioning System (GPS). The depth of the monitoring location was measured using depth meter in order to determine the sampling depths. Afterwards, the probes of the in-situ measurement equipment was lowered to the predetermined depths (1 m below water surface, mid-depth and 1 m above seabed) and the measurements was carried out accordingly. The in-situ measurements at predetermined depths was carried out in duplicate. In case the difference in the duplicate in-situ measurement results was larger than 25%, the third set of in-situ measurement would be carried out for result confirmation purpose.
- 5.24 Water sampler was lowered into the water to the required depths of sampling. Upon reaching the pre-determined depth, a messenger to activate the sampler was then released to travel down the wire. The water sample was sealed within the sampler before retrieving. At each station, water samples for SS at three depths (1 m below water surface, mid-depth and 1 m above seabed) were collected accordingly. Water samples were stored in a cool box and kept at less than 4°C but without frozen and sent to the laboratory as soon as possible.

Laboratory Analytical Methods

- 5.25 The testing of all parameters were conducted by ALS Hong Kong (HOKLAS Registration No.083) and comprehensive quality assurance and control procedures in place in order to ensure quality and consistency in results. The testing method and limit of reporting are provided in **Table 5.5**.

Table 5.5 Methods for Laboratory Analysis for Water Samples

Parameters (Unit)	Proposed Method	Reporting Limit	Detection Limit
SS (mg/L)	APHA 2540 D	0.5 mg/L ⁽¹⁾	0.5 mg/L
BOD ₅ (mg O ₂ /L)	APHA 19ed 5210B	2 mg O ₂ /L	--
TOC (mg-TOC/L)	In-house method SOP020 (Wet Oxidation)	1 mg-TOC/L	--
Total Nitrogen (mg/L)	In-house method SOP063 (FIA)	0.6 mg/L	--
Ammonia-N (mg NH ₃ -N/L)	In-house method SOP057 (FIA)	0.05 mg NH ₃ -N/L	--
Total Phosphorus (mg-P/L) ⁽²⁾	In-house method SOP055 (FIA)	0.05 mg-P/L	--

Note:

1) Limit of Reporting is reported as Detection Limit for non-HOKLAS report.

2) Parameter Total Phosphorus represents the laboratory testing for total phosphate content in water which is the sum of all three forms of phosphates in water.

QA/QC Requirements

Decontamination Procedures

- 5.26 Water sampling equipment used during the course of the monitoring programme was decontaminated by manual washing and rinsed clean seawater/distilled water after each sampling event. All disposal equipment was discarded after sampling.

Sampling Management and Supervision

- 5.27 Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4°C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.
- 5.28 QA/QC procedures as attached in **Appendix J** are available for the parameters analysed in the HOKLAS-accredited laboratory, ALS Hong Kong.

Results and Observations

Groundwater Quality Monitoring

- 5.29 Monitoring of groundwater quality had been suspended since October 2019. (Details refer to Section 5.1)

Marine Water Quality Monitoring

- 5.30 Marine water monitoring results and graphical presentations are shown in **Appendix I**. Other relevant data was also recorded, such as monitoring location / position, time, sampling depth, weather conditions and any special phenomena or work underway nearby.
- 5.31 Calculated Action and Limit Levels for Marine Water Quality is presented in **Appendix I**. There were twenty (20) Action Level and forty-six (46) Limit Level exceedances recorded in Monitoring Stations (M) during marine water quality monitoring.
- 5.32 The monitoring result for post-reclamation marine water quality monitoring is present in **Appendix W**. No action or limit level of dissolved oxygen is recorded in the reporting month.
- 5.33 Exceedances of turbidity and suspended solid were recorded on from various monitoring stations non-specifically among all stations including the control stations. Investigations over December 2021 showed that the range of SS levels recorded in December 2021 remained consistent with the records in recent months. All Contractor is reminded to strictly follow the approved drainage plan and clear drainage regularly. In particular, all drainage shall be checked and cleared after heavy rainstorm as sediments may accumulate along pipes and culverts. Further details can be found in **Appendix K**.
- 5.34 Silt curtain inspections are carried out before the commencement of the construction works every day and diving surveys are also conducted once a week to inspect the silt curtain below the water level. The inspection report are verified by both the RE and the diving specialist and the records are reviewed weekly during the site audits.

Groundwater Level Monitoring (Piezometer Monitoring)

- 5.35 Daily piezometer monitoring at any time of the day shall be carried throughout the whole period when any tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan.
- 5.36 Construction phase daily piezometer monitoring by the Contractor commenced in June 2018. As the construction activity was 120m away from the piezometer gate, no monitoring was conducted in this reporting month.

Mitigation Measures Adopted by Contractors for Surface runoff Prevention

- 5.37 During dry season, the Contractors have maintained the mitigation measures adopted on Site, in order to prevent surface run-off and muddy water from discharging to the public areas. The mitigation measures adopted by each Contract are summarised below:

NE2015/01

- 5.38 At Lam Tin Side, the Site drainage systems are divided into two parts, namely the site formation and tunnel site drainage which includes:
1. Site formation drainage system collects surface run-off from open excavation areas including slope works and flows naturally to the lowest point in the Site, where they are pumped to the wetseps and sedimentation tank for treatment near LTI site entrance before they are discharged to the designated discharge point.
 2. Tunnel drainage system collects surface run-off from the tunnel which are then pumped to the sedimentation tanks near tunnel adit, where three sets of wetseps and sedimentation tanks were set up. The treated water will be discharged to designated discharge point near the Eastern Harbour Crossing (EHC) area.
- 5.39 At Eastern Harbour Crossing (EHC), two sets of wetseps and sedimentation tanks are set up on site. The wastewater will flow to the lowest catchpit by gravity, which are then pumped to wetseps for wastewater treatment. The sandbags/bunds are also set up at the vehicle entrance to surface run-off from the Site.
- 5.40 At Tseung Kwan O (TKO), the surface run-off from the slope are directed to the lowest point at cavern via the permanent drainage, which are then pumped to the sedimentation tanks for wastewater treatment via temporary pipes. The treated water will be discharged at designated discharge points. The wetseps and sedimentation tanks are provided under the BMCPC bridge and at the two sides of marine working platform. Water from natural stream will also be diverted to existing drainage to avoid overloading the capacity of the wastewater treatment system. The reservoir on the right side of marine working platform will be enlarged to cater for higher water storage demands. During heavy rainfall, the water stored at the exit of the tunnel shall be pumped into the sedimentation tanks on the right.

NE2015/02

- 5.41 The exposed sloped area at Portion 9 has been covered with geotextile or tarpaulin to avoid surface run-off. Since March 2021, the stormwater at Portion IX, VIII, VII, VI, II and I will be collected towards to the sedimentation tanks at the edge of site boundary.

-
- 5.42 Certain amount of stormwater received in Portion 9 will be directed and pumped via the flex tube and sump towards the water treatment system and the approved discharge points (as shown in **Appendix V**). Water generated from Portion VI and V and some water in Portion IX are treated via storage tanks and sedimentation tanks and discharged into approved discharge points (manholes of DN2100 Drain and Area Z).
- 5.43 The peripheral open U-channel are also provided along the site boundary, which shall be directed to the storage tank and WetSep for treatment in Area A.
- 5.44 Regular cleaning depending on site conditions are provided for the WetSep at Area A and Z; and the storage tanks and sedimentation tanks at Area A. The water treated by the sedimentation tank and the wetsep shall be discharged towards the designated discharge point. Quality of the effluent are also monitored regularly.

NE2017/02

- 5.45 Existing manholes are covered with sandbags and geotextiles to avoid surface run-off from entering the channels.
- 5.46 Stockpiles are covered with tarpaulin to avoid surface run-off.
- 5.47 Concrete blocks and sandbags are placed along the periphery of the site boundary to avoid surface run-off.
- 5.48 Stormwater within the site enters the excavated area and flow naturally into the sump due height difference. The stormwater collected in the sump shall be pumped into the sedimentation tank where the run-off is treated before discharging into the designated discharge point.

NE2015/03

- 5.49 The existing manhole cover are covered with geotextile to prevent muddy water from entering the existing U-channels along the side of Po Shun Road. Manhole inspection are carried out by taking silt measurement regularly in case if silt enters the channel, and silt shall be removed from the manhole if silt were found.
- 5.50 Sandbags were placed at the periphery of the site along the hoarding to prevent surface runoff from escaping the site.
- 5.51 Exposed slopes are covered with tarpaulin to prevent surface run-off.
- 5.52 The surface run-off shall be pumped into the sedimentation tank where they are treated before entering the designated discharge points.

NE2017/01

- 5.53 Temporary peripheral open U-channels and sumps are provided for collecting the stormwater, which are pumped and directed towards the sedimentation tank for treatment. The treated water shall be directed to the designated discharge point.

6. ECOLOGY

Post-Translocation Coral Monitoring

- 6.1 Post-translocation monitoring survey is recommended in the EM&A Manual to audit the success of coral translocation. Information gathered during each post-translocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey.
- 6.2 Under Contract No. NE/2015/01 and NE/2015/02, a total of 14 and 29 coral colonies were tagged and translocated respectively from the Donor Site to the Recipient Site in November 2016. Ten (10) corals at the Recipient Site were also tagged by each Contract as reference for post-translocation monitoring.
- 6.3 The post-translocation coral monitoring shall be conducted once every 3 months after completion for a period of 12 months. Location of post-translocation coral monitoring is shown in **Figure 7**. The fourth post-translocation coral monitoring was carried out on 07 November 2017. No further monitoring is required.

7. CULTURAL HERITAGE

Monitoring Requirement

- 7.1 According to the EP Conditions and EM&A Manual, monitoring of vibration impacts was conducted when the construction works are less than 100m from the Built Heritage in close proximity of the worksite, namely the Cha Kwo Ling Tin Hau temple. Tilting and settlement monitoring should be applied on the Cha Kwo Ling Tin Hau Temple. Construction works less than 100m from the Cha Kwo Ling Tin Hau temple commenced on 8 May 2017.
- 7.2 As stated in the “*Built Heritage Mitigation Plan*” for this Project, during the period of the construction works conducted within 100m from the Cha Kwo Ling Tin Hau Temple, monitoring on settlement and tilting will be conducted once a day for the Cha Kwo Ling. Monitoring of vibration will be conducted during blasting at Cha Kwo Ling area once a day. When there is no blasting to be conducted at the area, vibration monitoring at the Cha Kwo Ling Tin Hau Temple will be conducted once per day when there are piling works or rock breaking works within the 100m from the Cha Kwo Ling Tin Hau Temple.

Monitoring Locations

- 7.3 One vibration monitoring point and three building settlement monitoring points were proposed for monitoring of the cultural heritage. The building settlement markers were placed on the wall on three sides of the Temple, except the front, of the Cha Kwo Ling Tin Hau Temple and the vibration monitoring point is located within the Cha Kwo Ling Tin Hau Temple. Monitoring Location is shown in **Figure 8**.

Monitoring Equipment

- 7.4 Building settlement is measured via a settlement marker attached to the wall of Cha Kwo Ling Tin Hau Temple by adhesive tape.
- 7.5 Vibration monitoring was conducted by using vibrographs: Minimate Plus manufactured by InstanTel. These vibrographs will be calibrated annually and its performance follows the requirements given in the “*Guidance Note on Vibration Monitoring*” (GN-VM) issued by the Civil Engineering and Development Department, which is based on the Performance Specification for Blasting Seismographs by International Society of Explosive Engineers (ISEE (2000)).
- 7.6 **Table 7.1** summarizes the equipment employed by the Contractor for cultural heritage monitoring. Copies of calibration certificates are attached in **Appendix B**.

Table 7.1 Cultural Heritage Monitoring Equipment

Equipment	Manufacturer and Model	Quantity
Digital Level for tilting	Leica LS15 Serial No.: 701141	1
Digital Caliper for tilting	Mitutoyo CD-6” ASX Serial No.: A17047921	1
iCivil-1011 Inclinometer for building settlement	iCivil-1011 Inclinometer Serial No.: HK110118 / HK110120	2
Vibrographs for vibration monitoring	MiniMate Plus / MicroMate manufactured by InstanTel Model No.: 716A0403 / 721A2501	33

Monitoring Methodology

- 7.7 Vibrograph (velocity seismograph) was deployed at each monitoring station to measure and record the PPV and amplitude of ground motion in three mutually perpendicular directions. Vibration monitoring equipment fulfils the requirements stated in the Government guidelines and is calibrated to HOKLAS standards. Each monitoring would not be more than 10 minutes. Settlement monitoring should be conducted by surveyors manually.

Alert, Alarm and Action Levels

- 7.8 The Alert, Alarm and Action (AAA) Levels are given in **Table 7.2**.

Table 7.2 AAA Levels for Monitoring for Cultural Heritage

Parameter	Alert Level	Alarm Level	Action Level
Vibration	ppv: 4.5 mm/s	ppv: 4.8 mm/s	ppv: 5mm/s Maximum Allowable Vibration Amplitude: 0.1mm
Building Settlement Markers	6mm	8mm	10mm
Building Tilting ⁽¹⁾	1:2000	1:1500	1:1000

Remarks:

- (1) Building tilting measurement was replaced by building settlement point measurement. The tilting can be calculated by the ratio of the maximum settlement difference between 2 points and the distance between the 2 points.

Results

- 7.9 In the reporting month, cultural heritage monitoring was carried out by the Contractor at the aforesaid location on 26 occasions. No AAA Level exceedance was recorded in the reporting month. The monitoring results are presented in **Appendix T**.

Mitigation Measures for Cultural Heritage

- 7.10 According to Condition 3.6 of the EP (EP No.: EP-458/2013/C), to prevent damage to Cha Kwo Ling Tin Hau Temple and its Fung Shui rocks (Child-given rocks) during the construction phase, a temporarily fenced-off buffer zone (Rocks buffer zone is 5 m from the edge of Rocks and 15m from the edge of Rocks alter) with allowance for public access (minimum 1 m) around the temple and the Fung Shui rocks shall be provided. The open yard in front of the temple should be kept as usual for annual Tin Hau festival.
- 7.11 As there is a large buffer distance from the current works to Cha Kwo Ling Tin Hau Temple and the Fung Shui rocks (Child-given rocks), the temporarily fenced-off rocks buffer zone and from the edge of Rocks alter is not required. The fenced-off rocks buffer zone would be implemented when there is construction activities in vicinity of the cultural heritage.

8. LANDSCAPE AND VISUAL IMPACT REQUIREMENTS

- 8.1 Landscape and visual mitigation measures during the construction phase shall be checked to ensure that they are fully realized and implemented on site.
- 8.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures listed in “Implementation Schedule and Recommended Mitigation Measures” (shown in **Appendix N**). The summaries of observations and recommendations related to landscape and visual impacts, if any, are shown in **Appendix L**.
- 8.3 No non-compliance of the landscape and visual impact was recorded in the reporting month.

9. LANDFILL GAS MONITORING

Monitoring Requirement

- 9.1 In accordance with the EM&A Manual, monitoring of landfill gas is required for construction works within the Sai Tso Wan Landfill Consultation Zone during the construction phase. This section presents the results of landfill gas measurements performed by the Contractor. **Appendix A** shows the Limit Levels for the monitoring works.
- 9.2 The “Landfill Gas Monitoring Proposal”, including the monitoring programme and detailed actions, is submitted to the EPD for approval. Details of monitoring in this Proposal is in line with the monitoring requirements stipulated in the EM&A Manual.

Monitoring Parameters and Frequency

- 9.3 Monitoring parameters for Landfill gas monitoring include Methane, Carbon dioxide and Oxygen.
- 9.4 According to the implementation schedule and recommended mitigation measures of the EM&A Manual, measurements of the following frequencies should be carried out:

Excavations deeper than 1m

- at the ground surface before excavation commences;
- immediately before any worker enters the excavation;
- at the beginning of each working day for the entire period the excavation remains open; and
- periodically throughout the working day whilst workers are in the excavation.

Excavations between 300mm and 1m deep

- directly after the excavation has been completed; and
- periodically whilst the excavation remains open.

For excavations less than 300mm deep

- monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person

Monitoring Locations

- 9.5 Monitoring of oxygen, methane and carbon dioxide was performed for excavations at 1m depth or more within the Consultation Zone. In this reporting month, the area required to be monitored for landfill gas are shown below and **Figure 6** shows the landfill gas monitoring locations.
- | | |
|----------------------------------|---------------|
| ➤ Excavation Locations | : Portion III |
| ➤ Manholes and Chambers | : N/A |
| ➤ Relocation of monitoring wells | : N/A |
| ➤ Any other Confined Spaces | : N/A |

Monitoring Equipment noise mitigation

- 9.6 **Table 9.1** summarizes the equipment employed by the Contractor for the landfill gas monitoring.

Table 9.1 Landfill Gas Monitoring Equipment

Equipment	Model and Make	Quantity
Portable gas detector	ALTAIR 5X Multigas Detector (Serial No. 137333)	1

Results and Observations

- 9.7 In the reporting month, landfill gas monitoring was carried out by the Contractor at the aforesaid locations on 130 occasions. No Limit Level exceedance for landfill gas monitoring was recorded in the reporting month. The monitoring results are provided in **Appendix R**. Copies of calibration certificates are attached in **Appendix B**.

10. ENVIRONMENTAL AUDIT

Site Audits

- 10.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix L**.
- 10.2 Joint weekly site audits by the representatives of the Engineer, Contractor and the ET were conducted in the reporting month as shown in below:
- Contract No. NE/2015/01: 1, 8, 15, 22, 29
 - Contract No. NE/2015/02: 2, 10, 16, 23, 30
 - Contract No. NE/2017/01: 2, 10, 16, 23, 30
 - Contract No. NE/2017/02: 2, 10, 16, 23, 30
 - Contract No. NE/2017/06: 2, 10, 16, 23, 30
 - Contract No. NE/2017/07: 1, 8, 15, 22, 29
- 10.3 Monthly joint site inspection with the representative of IEC was conducted for NE/2015/01 and NE/2017/07 on 22 December 2021, while NE/2015/02, NE/2017/01, NE/2017/02 and NE/2017/06 were conducted on 30 December 2021.
- 10.4 The EM&A programme of Contract No. NE/2015/03 had been terminated on 21 April 2020 under the approval of EPD.

Implementation Status of Environmental Mitigation Measures

- 10.5 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Implementation Schedule and Recommended Mitigation Measures is provided in **Appendix N**.
- 10.6 During site inspections in the reporting month, no non-compliance was recorded on reporting month. The observations and recommendations made during the audit sessions are summarized in **Appendix L**.

11. WASTE MANAGEMENT

- 11.1 Waste generated from this Project includes inert construction and demolition (C&D) materials, non-inert C&D materials and marine sediments. Inert C&D waste includes soil, broken rock, broken concrete and building debris, while non-inert C&D materials are made up of C&D waste which cannot be reused or recycled and has to be disposed of at the designated landfill sites. Marine sediment shall be expected from excavation and dredging works of this Project.
- 11.2 With reference to relevant handling records of this Project, the quantities of different types of waste generated in the reporting month are summarised and presented in **Appendix P**.
- 11.3 The Contractors are advised to minimize the wastes generated through the recycling or reusing. All mitigation measures stipulated in the approved EM&A Manual and waste management plans shall be fully implemented. The status of implementation of waste management and reduction measures are summited in **Appendix N**.

12. ENVIRONMENTAL NON-CONFORMANCE

Summary of Exceedances

- 12.1 No Limit Level exceedance of noise was recorded due to the monitoring results in the reporting month. Eight (8) Action Level exceedances of construction noise monitoring was recorded in the reporting month.
- 12.2 No Limit Level exceedance of air quality was recorded in the reporting month. No Action Level exceedance of air quality monitoring was recorded in the reporting month.
- 12.3 Twenty (20) Action Level and forty-six (46) Limit Level exceedances were recorded in Monitoring Stations (M) during marine water quality monitoring.
- 12.4 No Action and Limit Level exceedances were recorded for W2 during the post-reclamation marine water quality monitoring.
- 12.5 Actions carried out in accordance with the Event and Action Plans in **Appendix M** are presented in **Appendix K** – Summary of Exceedance.

Summary of Environmental Complaint

- 12.6 Eight (8) environmental complaints were received in the reporting month. The Cumulative Complaint Log is presented in **Appendix O**. The investigation status and result is also reported in **Appendix O**.

Summary of Environmental Summon and Successful Prosecution

- 12.7 No notification of summon or successful environmental prosecution was received in this reporting period. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix O**.

13. FUTURE KEY ISSUES

13.1 Tentative construction programmes for the next three months are provided in **Appendix Q**.

13.2 Major site activities to be undertaken for the next reporting period are summarized in **Table 13.1**.

Table 13.1 Summary Table for Site Activities in the next Reporting Period

Contract No. and Project Title	Site Activities (January 2022)		Key Environmental Issues *
NE/2015/01 - Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works	Lam Tin Interchange	1) EHC2 U-Trough 2) Site Formation Area 1G1 & 1G2 & 5 3) Site Formation Area 2 4) Site Formation Slope Stabilization 5) Site Formation Retaining Wall 6) Administration Building 7) West Ventilation Building 8) Bridge Construction 9) Emergency Stormwater Storage Tank & Stormwater Pumping Station 10)S01_2, EHC1&4 Construction 11)CKLR Underground Utilities 12)Underpass S01 13)Landscape Deck 14)LTI Drainage	(A) / (B) / (C) / (D) / (E) / (G)
	Main Tunnel	15)S02_2 Excavation & Lining 16)Main Tunnel Lining Works 17)Branch Tunnel Lining Works	(B)
	TKO Interchange	18)Bridge Construction 19)East Ventilation Building 20)Underground Utilities / Drainage Works	(A) / (C) / (D) / (E) / (F) / (I)
NE/2015/02 - Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works	1) Sloping Seawall Construction 2) Construction of U-trough 3) Construction of Seawall Coping 4) Construction of Road P2 and SR2		(A) / (B) / (C) / (D) / (E) / (G) / (I)
NE/2015/03 - Tseung Kwan O – Lam Tin Tunnel – Northern Footbridge	The construction works under the contract had been completed in December 2019. Materials are being removed from works area.		N/A
NE/2017/01 – Tseung Kwan O Interchange and Associated Works	1) Installation of Parapet Skin 2) Construction of Profile barrier 3) Grouting Works 4) Installation of Traffic Sign Gantry 5) Installation of Road Drainage and Drain Pipe		(A) / (B) / (E) / (F) / (G)
NE/2017/02 –Tseung Kwan O - Lam Tin Tunnel - Road P2/D4 and Associated Works	1) Inspection pit excavation and utility diversion works 2) Construction of drainage and watermain 3) Asphalt Paving 4) Pier, Staircase and Lift Shaft Construction 5) Road Works 6) Road Pavement and Road Marking		(A) / (B) / (E) / (F) / (G)
NE/2017/06 – Tseung Kwan O – Lam Tin Tunnel – Traffic Control and Surveillance	1) Goods arrival & storage on site 2) Installation in Admin Building 3) Installation works inside Tunnel		(E)

Contract No. and Project Title	Site Activities (January 2022)	Key Environmental Issues *
System(TCSS) and Associated Works		
NE/2017/07 - Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works	1) Top, transverse, bottom and external tension 2) Construction of long stitching 3) Construction of concrete structure above deck 4) Construction of steel-concrete transition zone 5) Bored piling 6) Pile cap construction 7) Pier construction 8) Erection for bridge segment	(A) / (B) / (D) / (E) / (F) / (G) / (H) / (I)

Note:

- (A) Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- (B) Noisy construction activity such as rock-breaking activities and piling works;
- (C) Runoff from exposed slope or site area;
- (D) Wastewater and runoff discharge from site;
- (E) Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
- (F) Set up and implementation of temporary drainage system for the surface runoff;
- (G) Storage of chemicals/fuel and chemical waste/waste oil on site;
- (H) Accumulation and storage of general and construction waste on site; and
- (I) Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation.

Key Issues for the Coming Month

13.3 Key environmental issues in the coming month include:

- Watering for dust generation from haul road, stockpiles of dusty materials, exposed site area, excavation works and rock breaking activities;
- Noisy construction activity such as rock-breaking activities and piling works;
- Runoff from exposed slope or site area;
- Wastewater and runoff discharge from site;
- Accumulation of silt, mud and sand along U-channels and sedimentation tanks;
- Set up and implementation of temporary drainage system for the surface runoff;
- Precaution measures in case of heavy rainfall brought along by typhoon;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation and storage of general and construction waste on site; and
- Marine water quality impact and indirect impact to coral communities due to marine construction for TKO-LTT reclamation.

14. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 14.1 This is the 62nd Environmental Monitoring and Audit (EM&A) Report which presents the EM&A works undertaken during the period in November 2021 in accordance with EM&A Manual and the requirement under EP.

Air Quality Monitoring

- 14.2 No Action/Limit Level exceedance for 1-hour TSP monitoring was recorded.
- 14.3 No Limit Level exceedance for 24-hour TSP monitoring was recorded.
- 14.4 One (1) Action Level exceedance for 24-hour TSP monitoring was recorded.

Construction Noise Monitoring

- 14.5 No Limit Level exceedance was recorded due to the monitoring results recorded in this reporting month.
- 14.6 No Action Level exceedance was recorded for documented complaints. The details of complaint shall be referred to **Appendix O**.

Water Quality Monitoring

- 14.7 Groundwater quality monitoring had been suspended since October 2019. Details shall be referred to **Section 5.1**.
- 14.8 Twenty (20) Action Level and forty-six (46) Limit Level exceedances were recorded in Monitoring Stations (M) during marine water quality monitoring.
- 14.9 No Action and Limit Level exceedances were recorded for W2 during the post-reclamation marine water quality monitoring in the reporting month.
- 14.10 Tunnel construction activities are within +/- 50m of the piezometer gate in plan. Construction phase daily piezometer monitoring by the Contractor commenced in June 2018. It has switched to monthly basis since 3 October 2018 as the construction activity was 120m away from the piezometer gate. No monitoring was conducted in the reporting month.

Ecological Monitoring

- 14.11 The post-translocation coral monitoring surveys were completed in November 2017.

Monitoring on Cultural Heritage

- 14.12 No Alert Alarm and Action (AAA) Level exceedance of cultural heritage monitoring on cultural heritage was recorded in the reporting month.

Landscape and Visual Monitoring and Audit

- 14.13 No non-compliance of the landscape and visual impact was recorded in the reporting month.

Landfill Gas Monitoring

- 14.14 Monitoring of landfill gases in the reporting month was carried out by the Contractor at excavation location, Portion III. No Limit Level exceedance was recorded.

Environmental Site Inspection

- 14.15 Joint weekly site inspections were conducted by representatives of the Contractor, Engineer and Environmental Team. During site inspections in the reporting month, no non-compliance was identified. The environmental deficiency observed during the reporting month are shown in **Appendix L**.

Complaint, Prosecution and Notification of Summons

- 14.16 Eight (8) environmental complaints, no successful prosecution and notification of summon were received during the reporting period.

Recommendations

- 14.17 The following recommendations were made to the Contractor for the reporting month:

Air Quality Impact

- To regularly apply watering on dry surface should be applied to minimize erosion.
- To aim the water spray at the rock breaking point for effective dust suppression.
- To water materials before loading/unloading.
- To turn off idle equipment.

Construction Noise

- To provide sufficient noise barriers for noisy PMEs as practically at LTI according to CNMP.
- To repair the gaps between the noise barriers.
- To place compatible noise barrier close to the breaking point for effective noise screening.
- To erect sound proof canvases on derrick lighter barge

Water Quality Impact

- To clear the oil slick and check for any damage of the silt curtain.
- To repair damaged or missing silt curtain
- To check whether the curtain has been set to the seabed.
- To ensure that the pumping rate of bored pile is sufficient to avoid discharging waste water into the sea.
- To clear floating refuse between the cofferdam and silt curtain.
- To clear oil slick within and outside cofferdam.
- To control the amount of loading materials in the barge to avoiding spillage.
- To cover stockpile near seafront.
- To remove wastewater and oil in drip tray.
- To remove pond/still water.

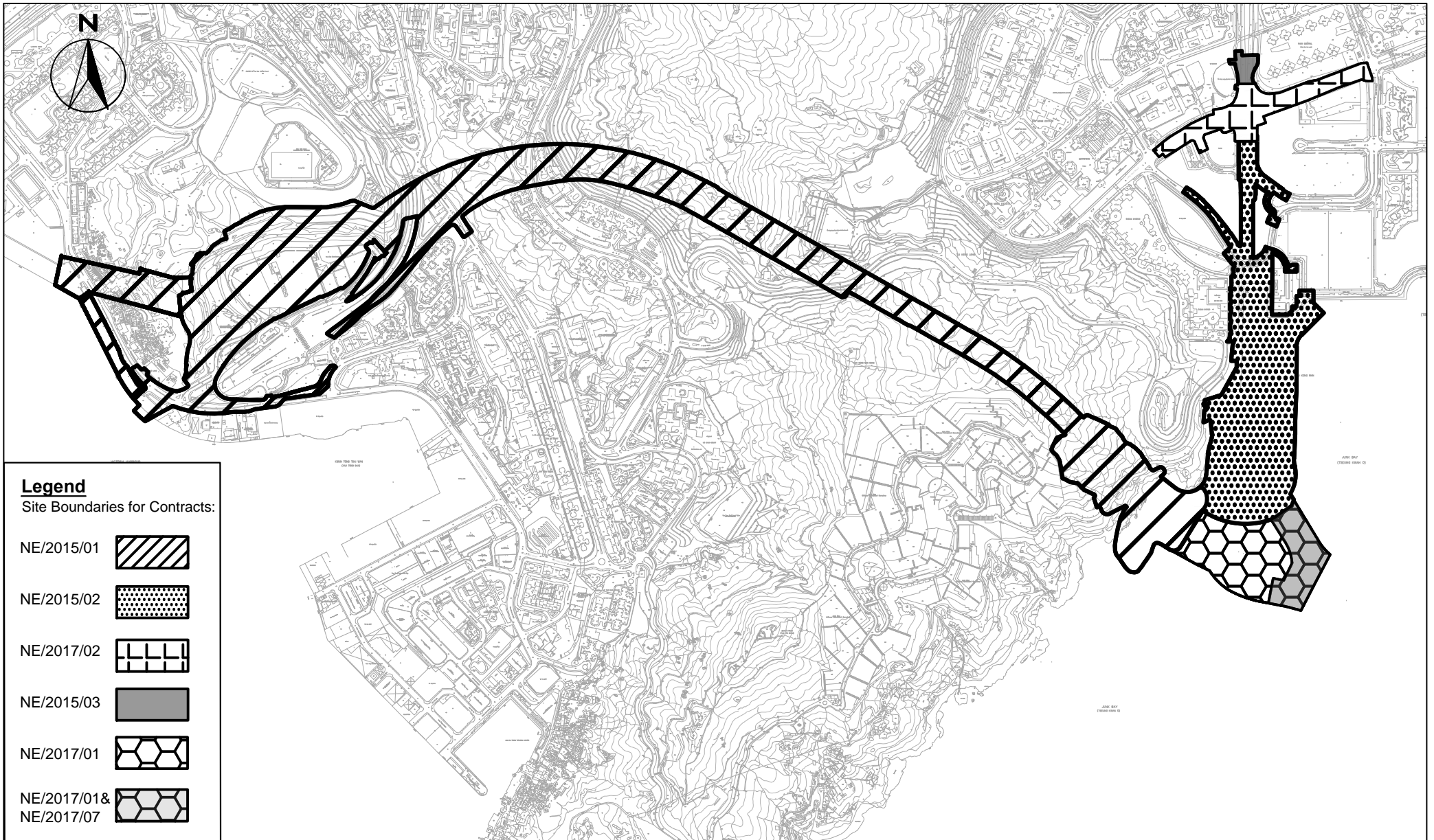
Waste/Chemical Management

- To bund or lock the chemical storage area.
- To clear dripping oil from bored piling machine.
- To clear oil slick on seawater.
- To clear oil on the floor.

Landscape and Visual



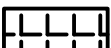

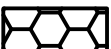

- To avoid placing any construction materials in the tree protection zone.

FIGURES



Legend

Site Boundaries for Contracts:

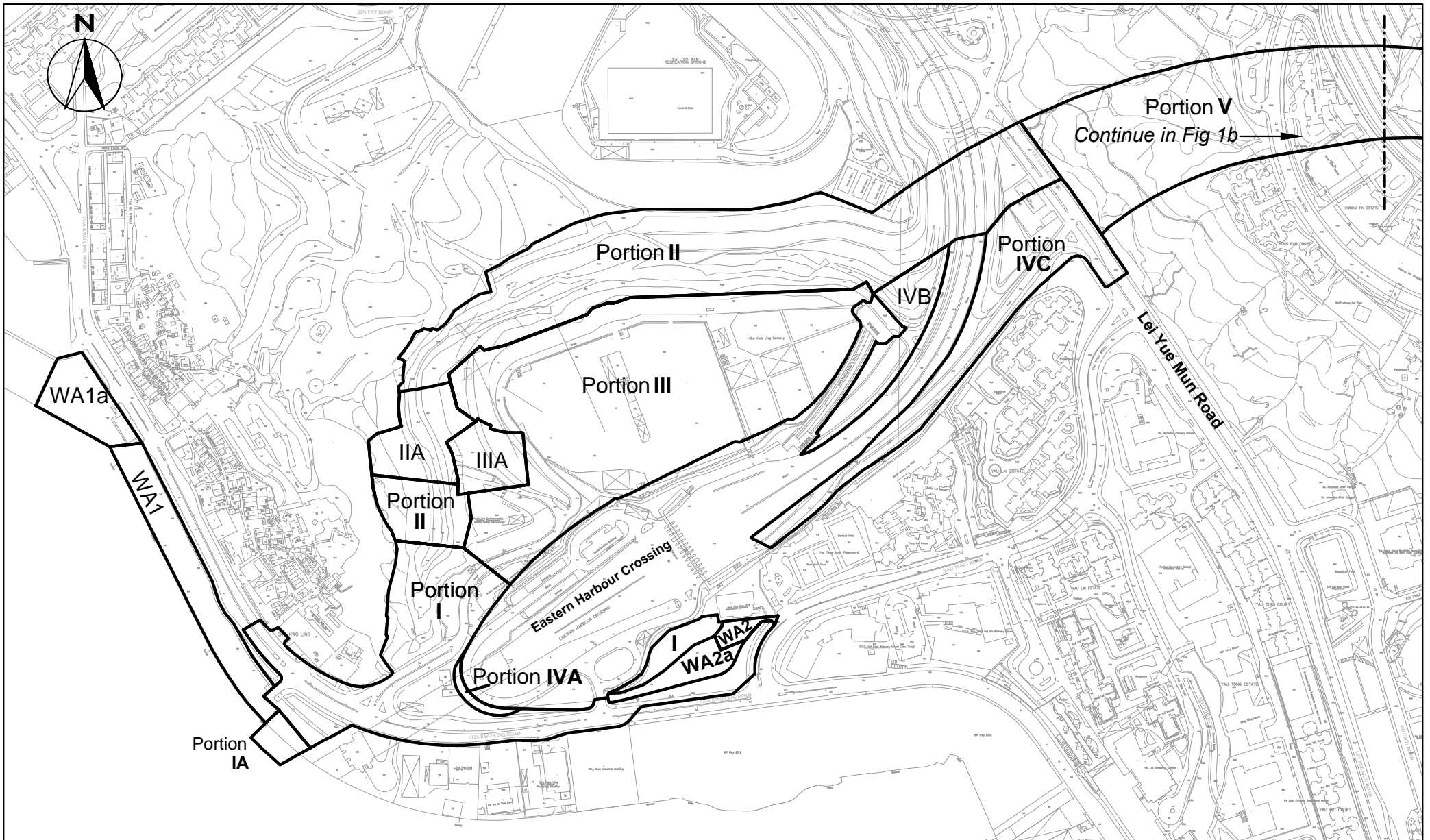
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- NE/2015/02 
- NE/2017/02 
- NE/2015/03 
- NE/2017/01 
- NE/2017/01 & NE/2017/07 



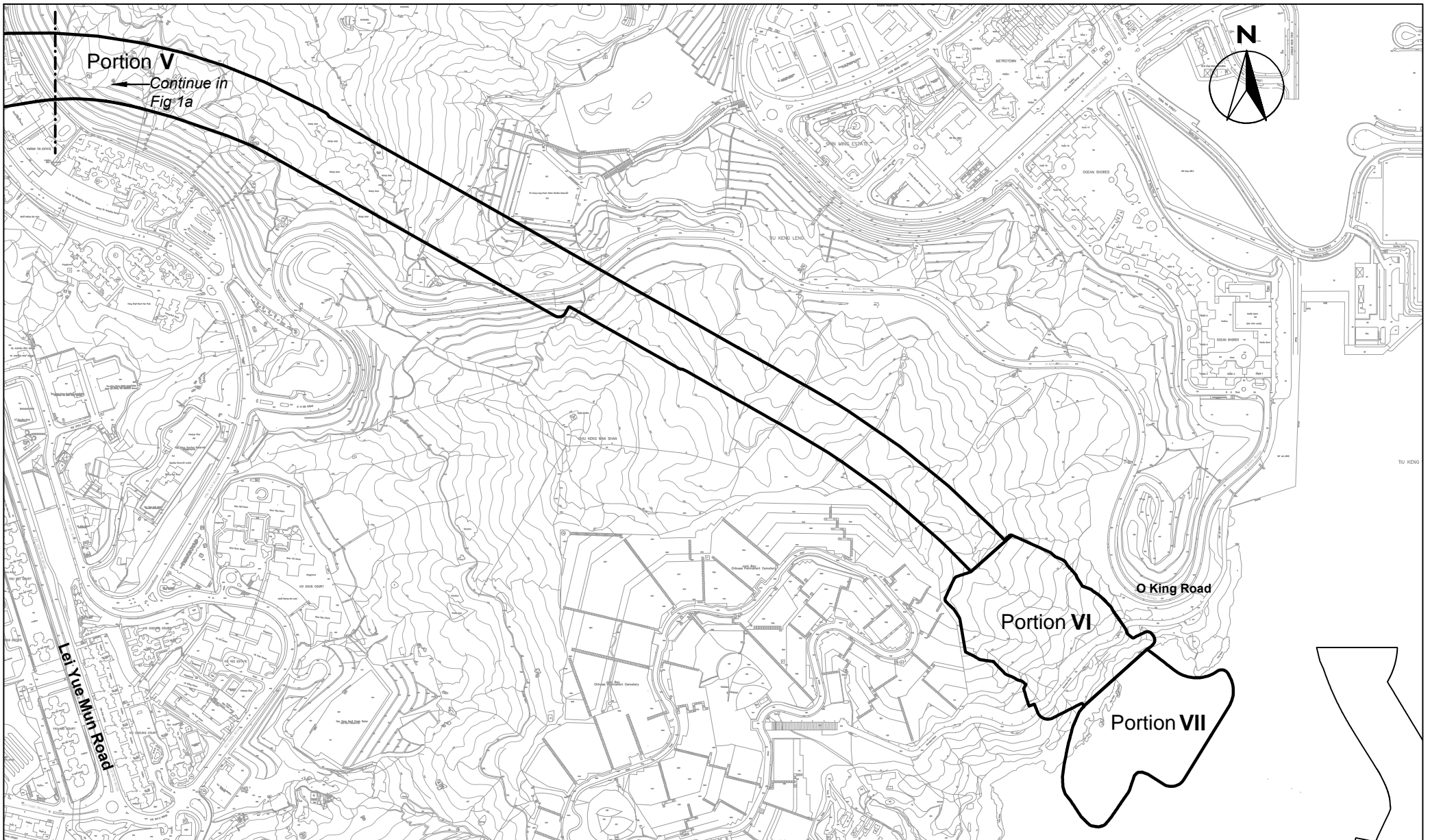
Agreement No. CE 59/2015 (EP)
 Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Site Layout Plan

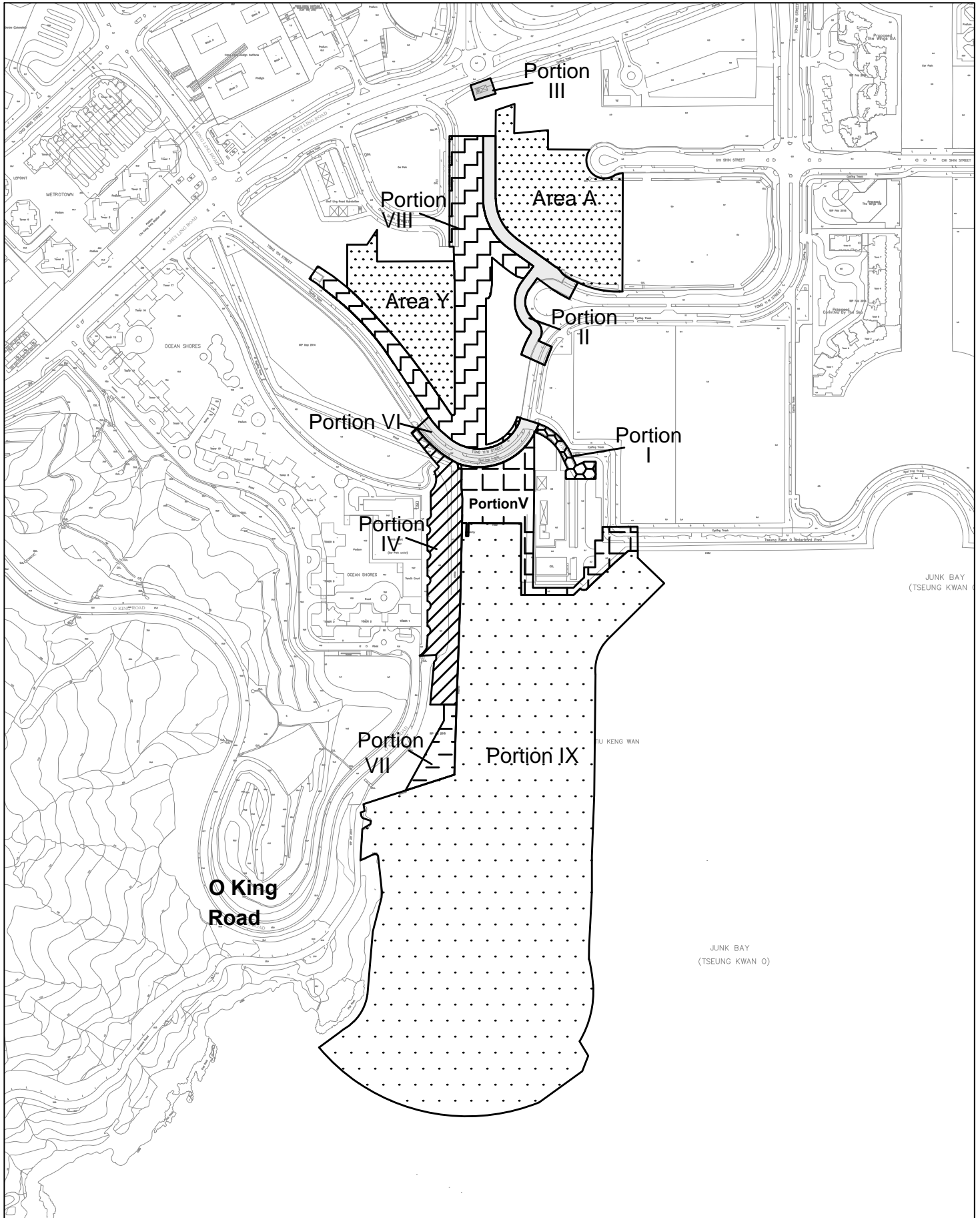
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JOB No.	MA16034	FIGURE NO.	1	REV -




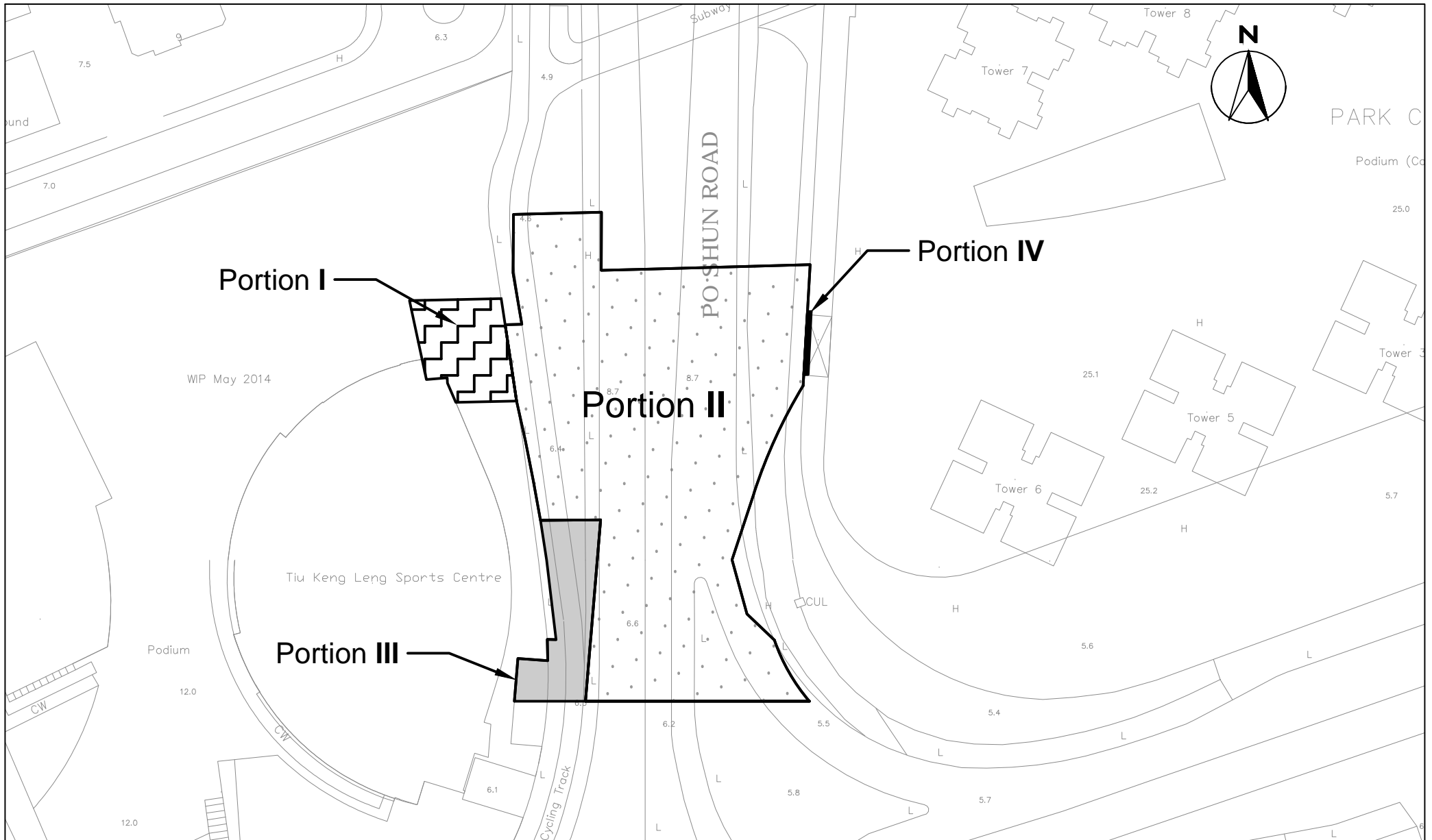
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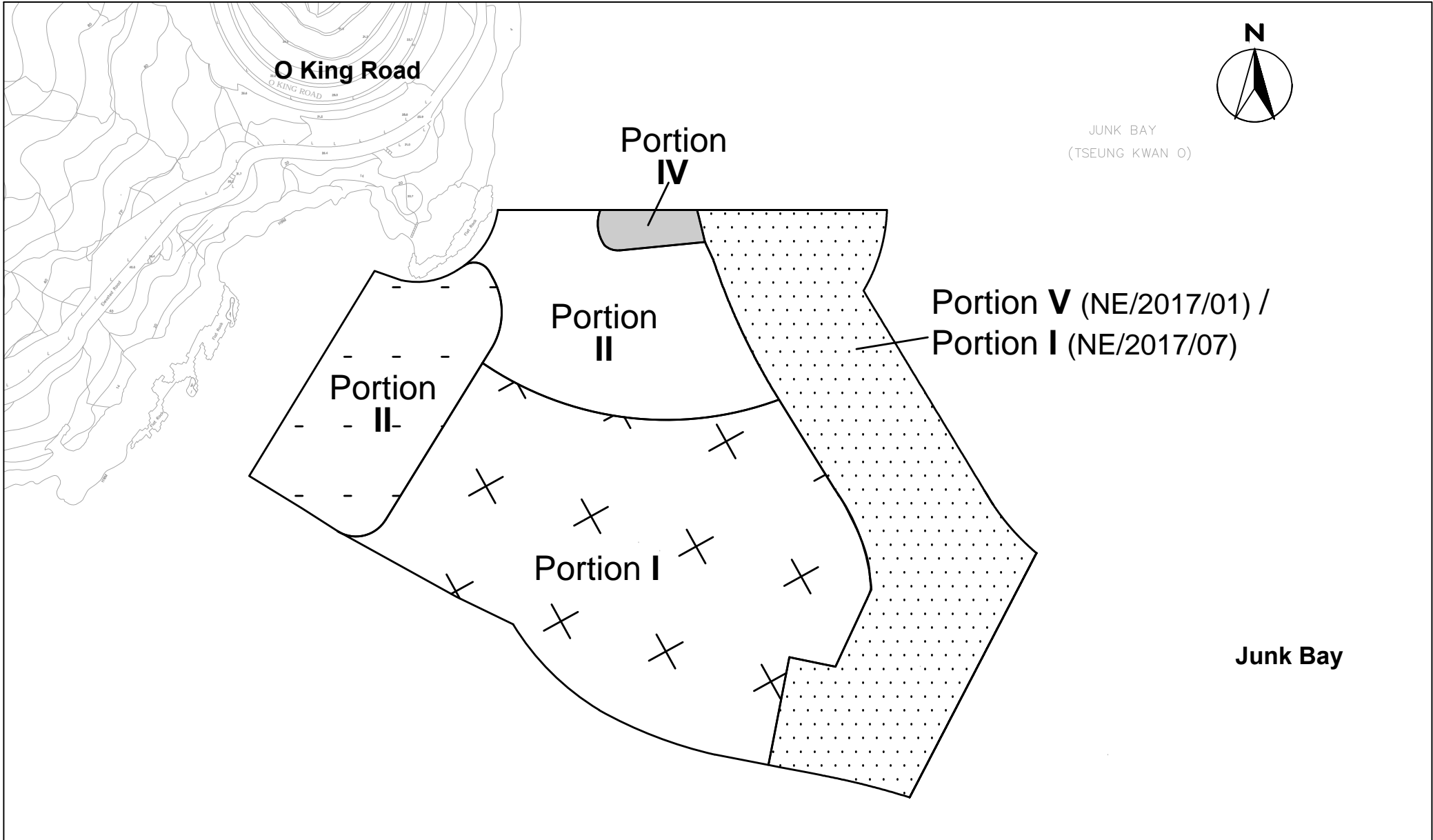
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JOB No.	MA16034	FIGURE NO.	1b
		REV	-



 CINOTECH Cinotech Consultants Limited	Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction Site Portions under Works Contract No. NE/2015/02	SCALE 1:5000@A4 CHECK CC JOB No. MA16034	DATE 25 July 2021 DRAWN KC FIGURE NO. 1C	REV -	

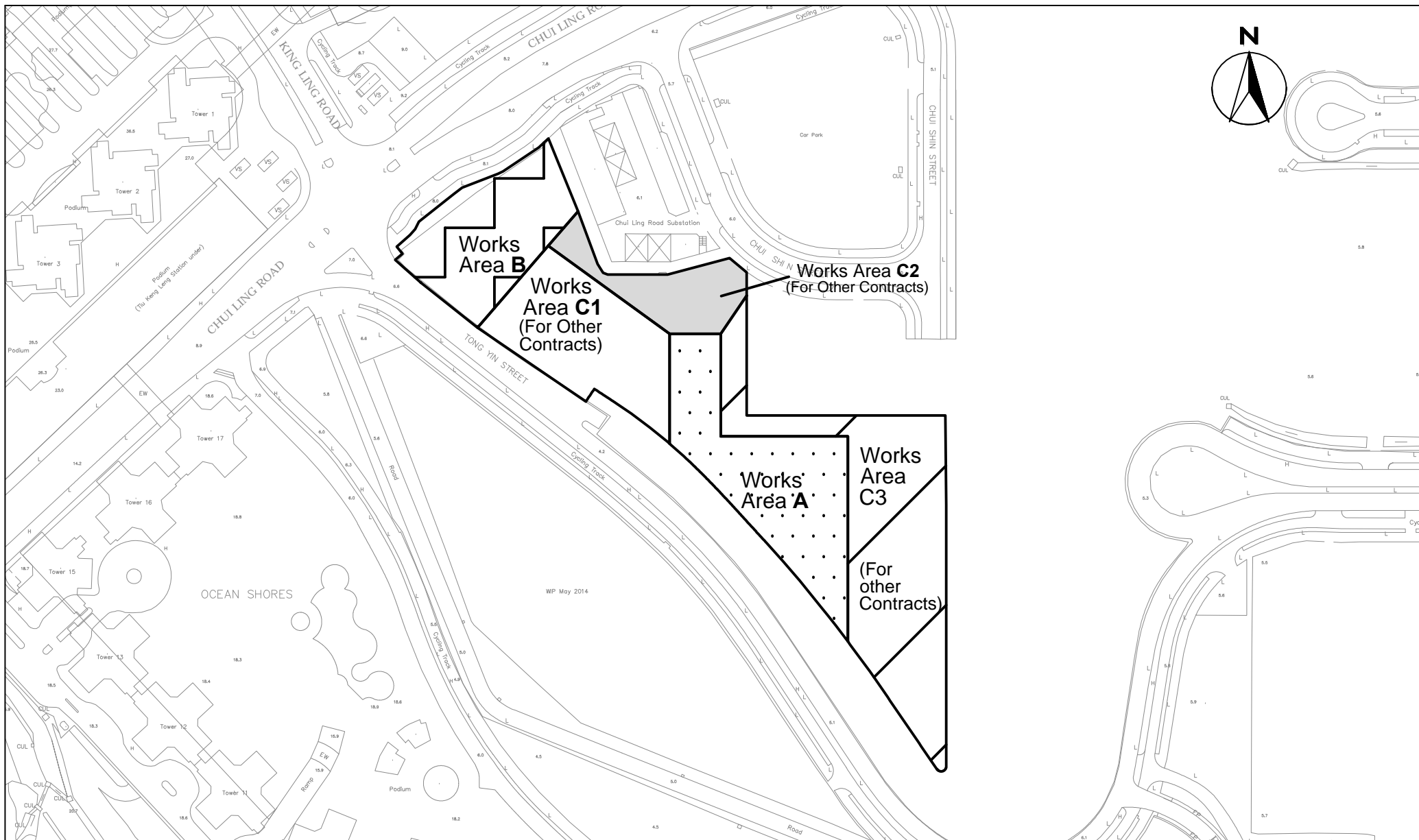


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JOB No.	MA16034	FIGURE NO.	1d
		REV	-

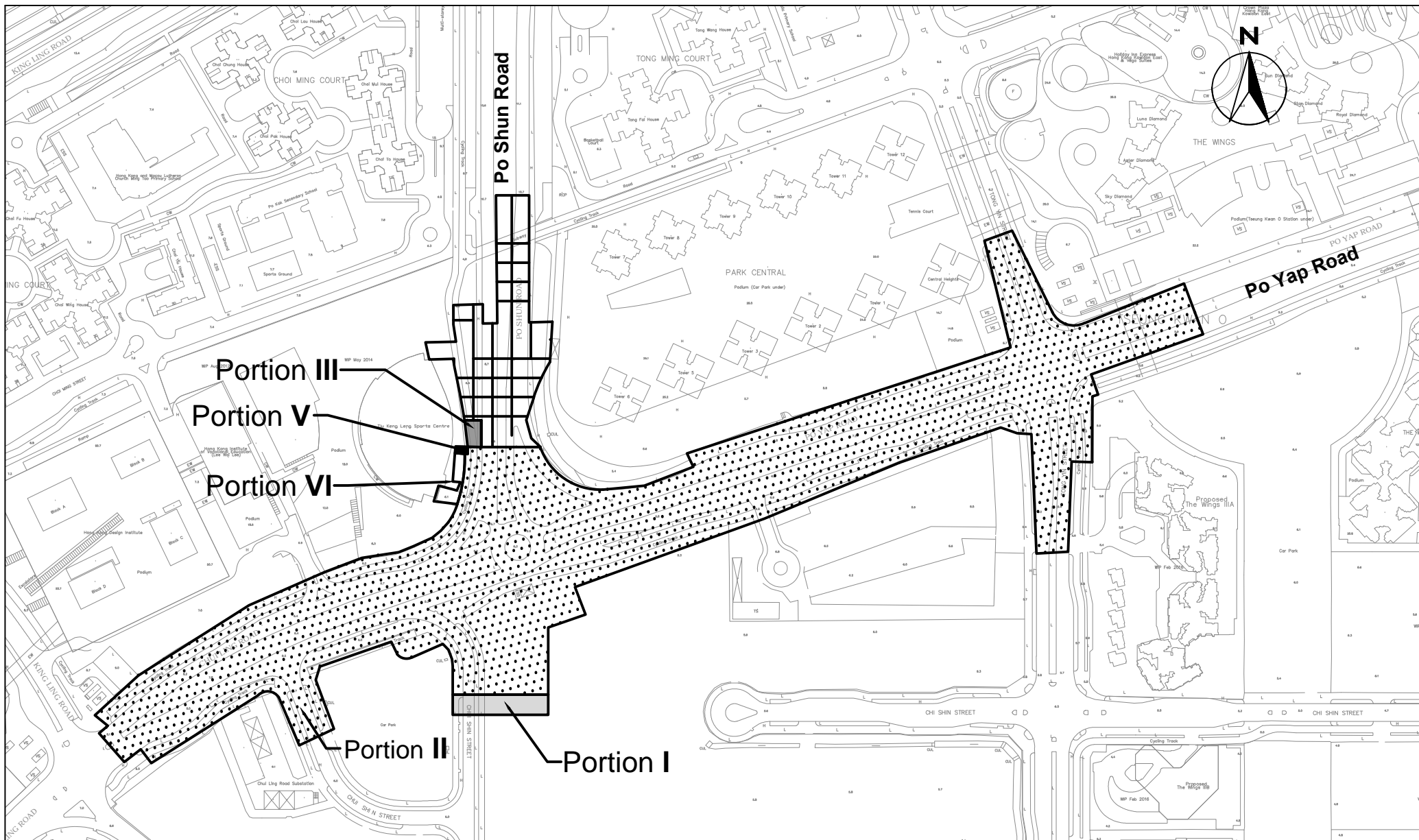


Agreement No. CE 59/2015 (EP)
 Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction
Site Portions in Tseung Kwan O under Works Contract No. NE/2017/01

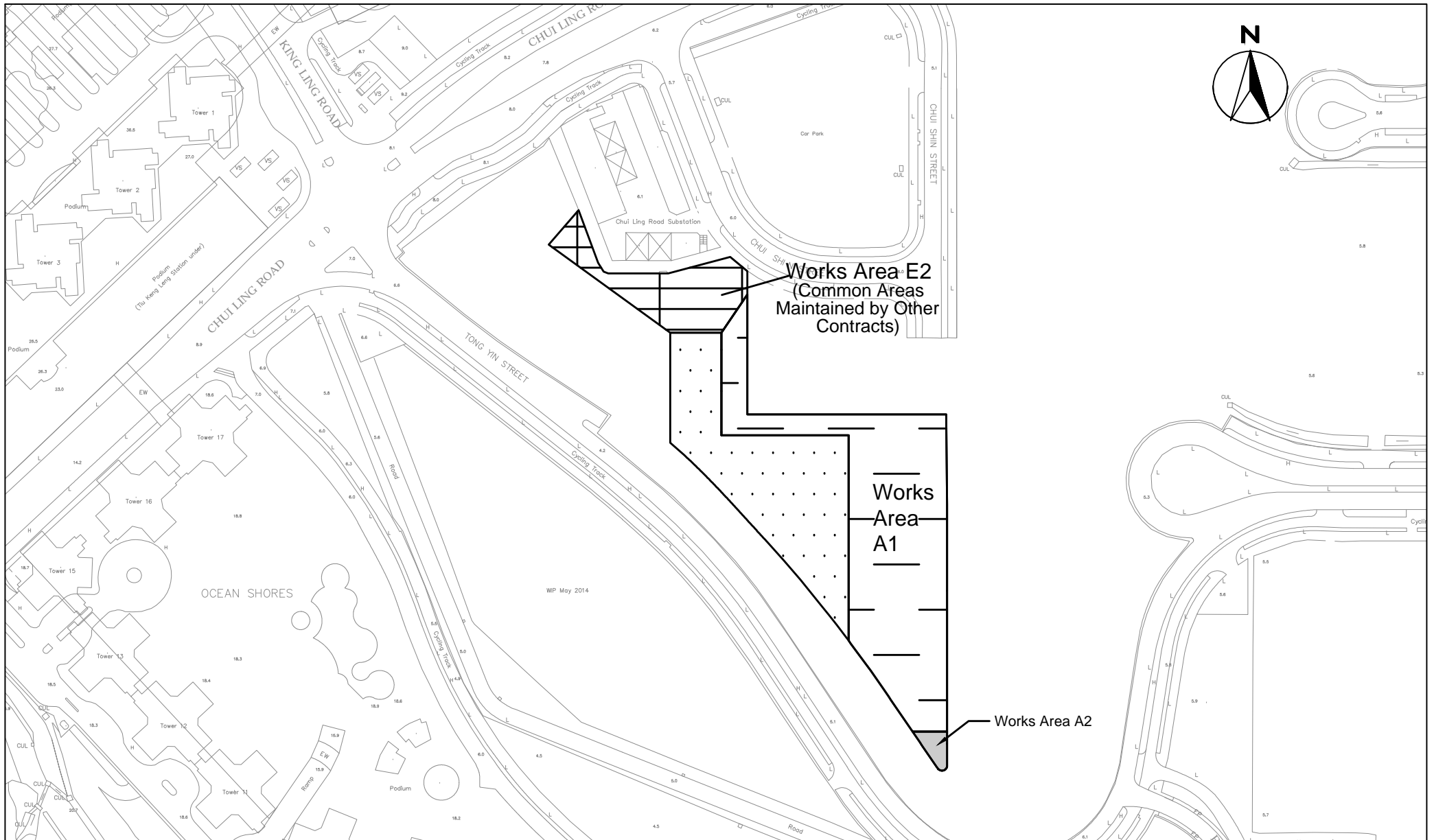
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JOB No.	MA16034	FIGURE NO.	1e
		REV	-



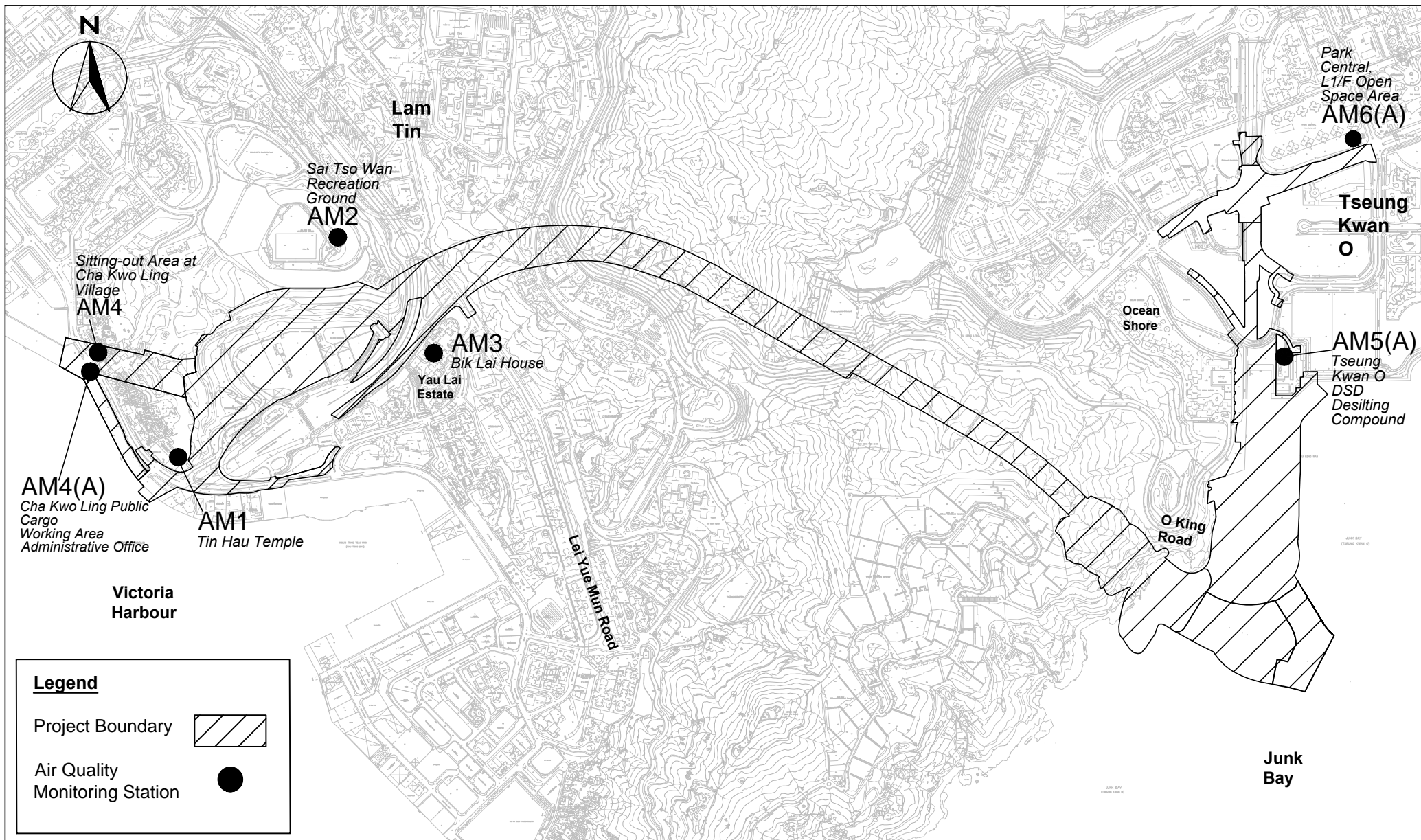
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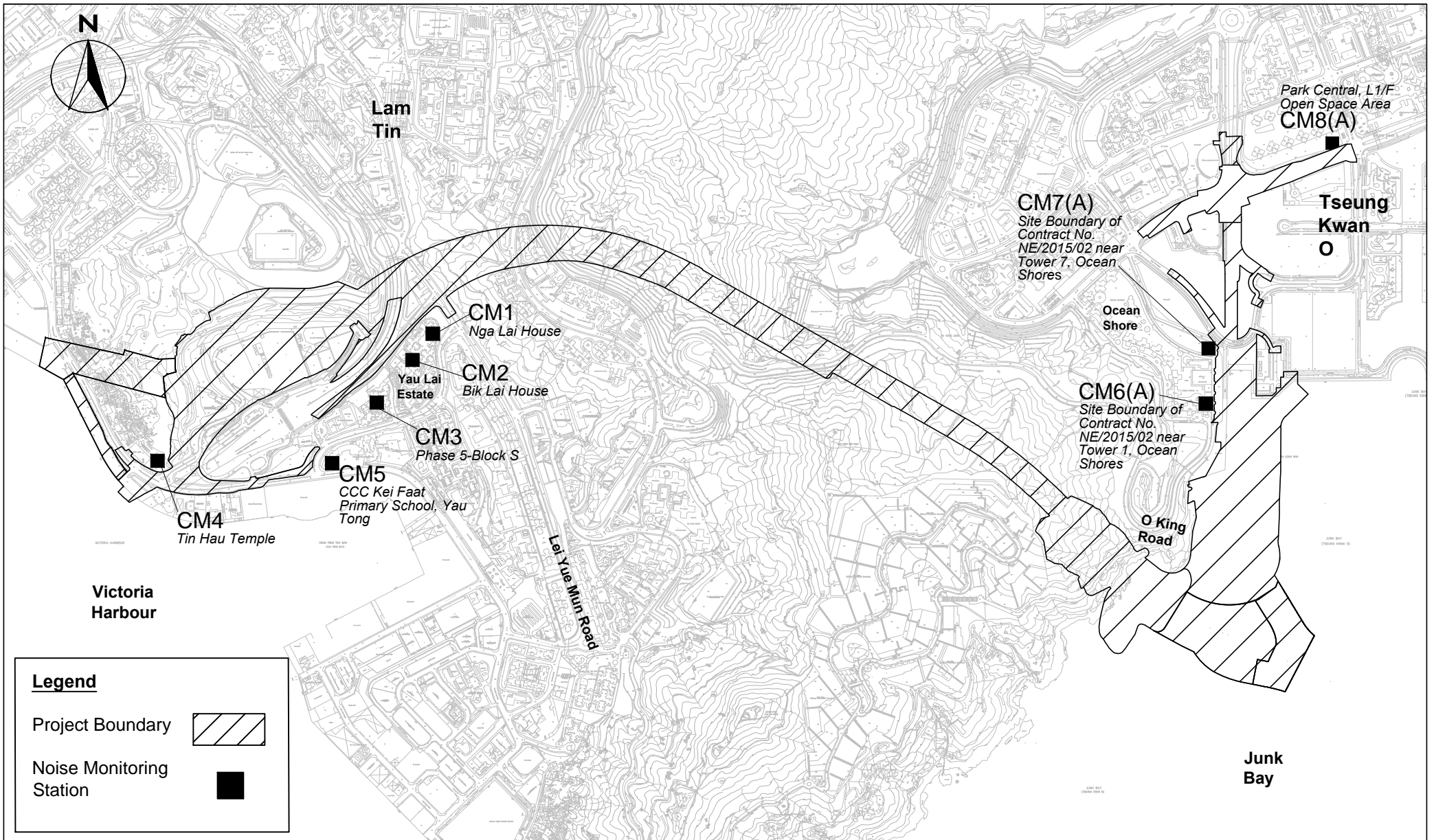
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JOB No.	MA16034	FIGURE NO.	1h	REV -



Agreement No. CE 59/2015 (EP)
 Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Air Quality Monitoring Station

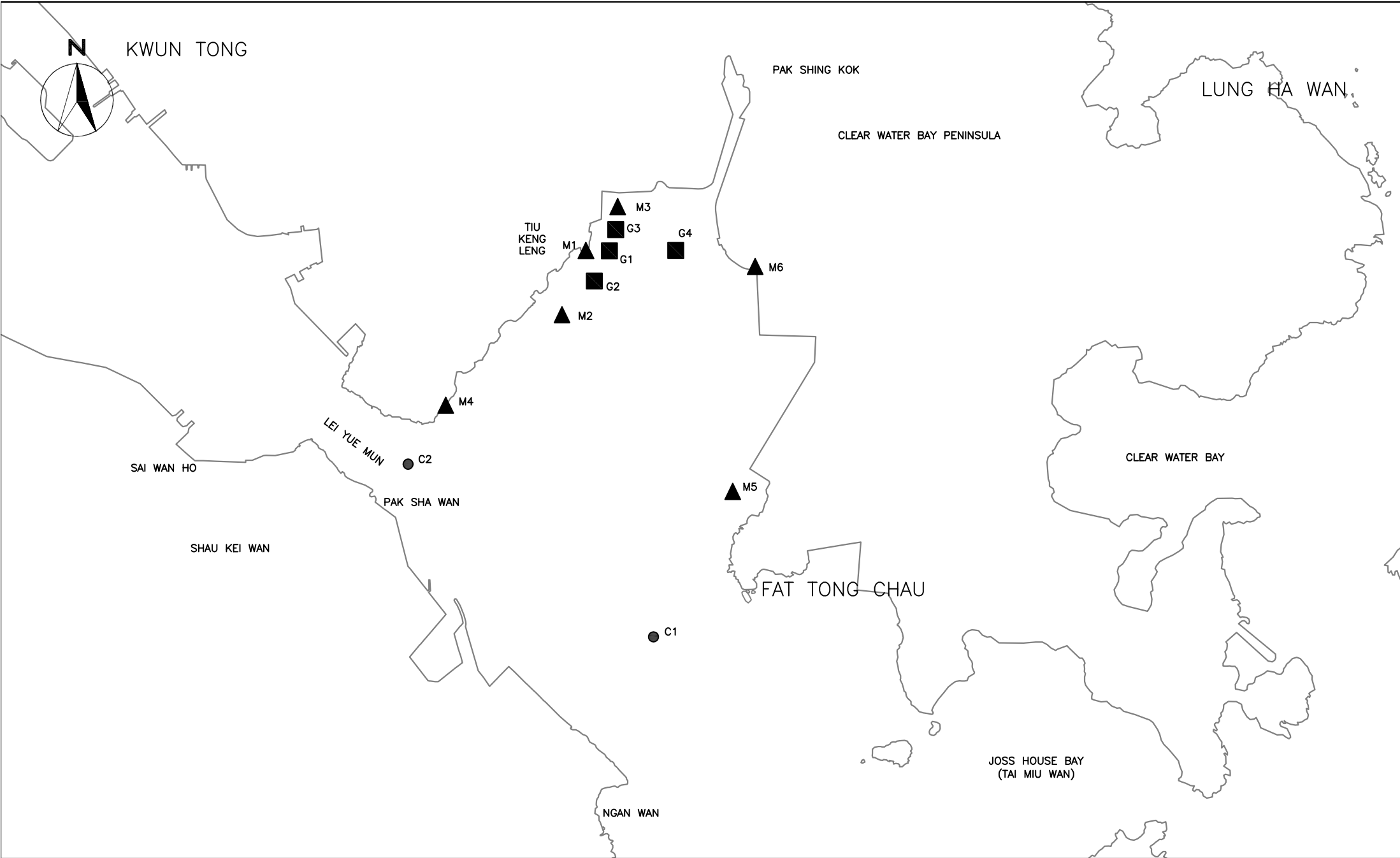
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Agreement No. CE 59/2015 (EP)
 Environmental Team for Tseung Kwan O – Lam Tin Tunnel– Design and Construction

Noise Monitoring Stations

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JOB No.	MA16034	FIGURE NO.	3	REV -



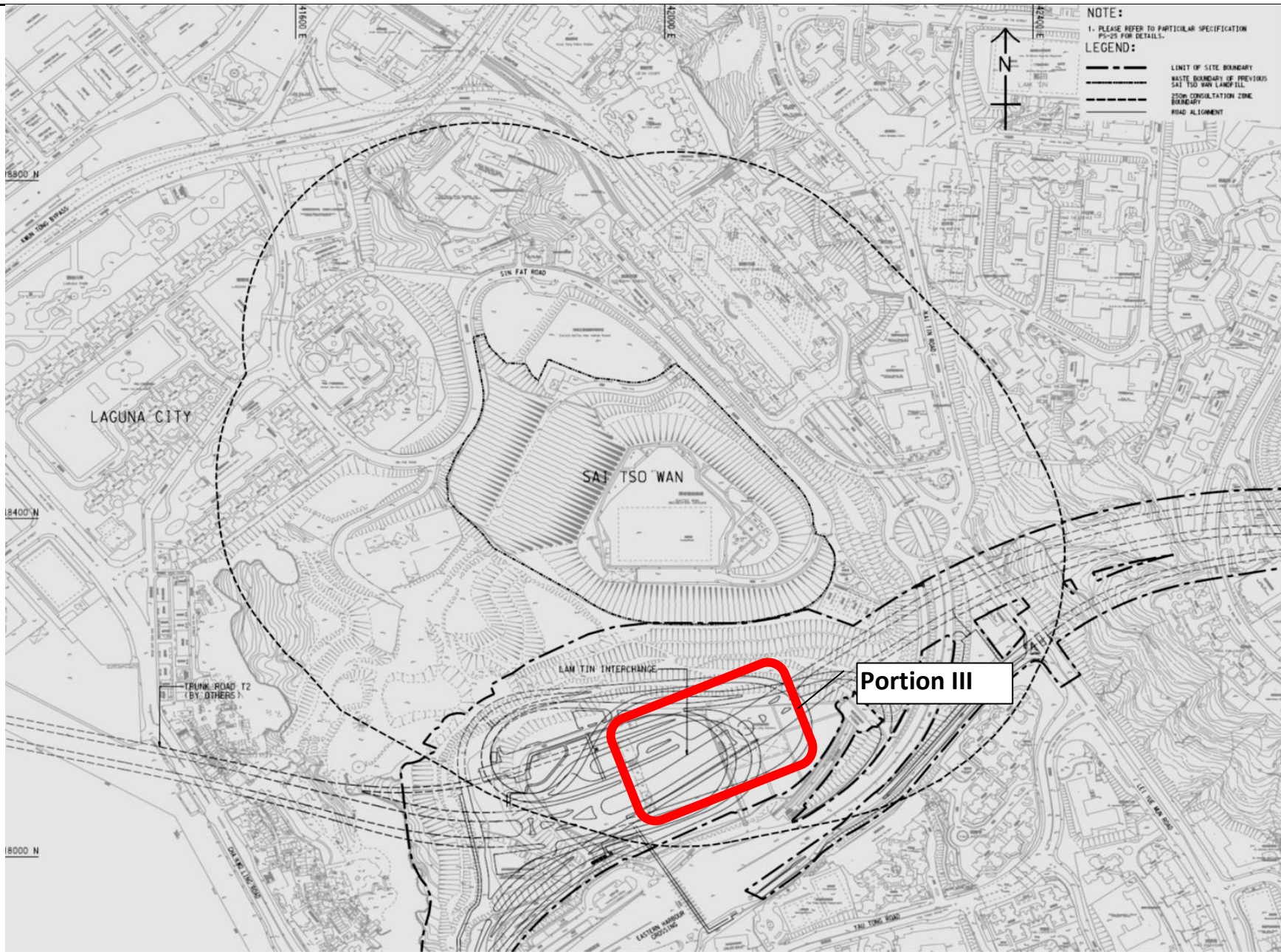
CINOTECH

Cinotech Consultants Limited

Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O – Lam Tin Tunnel –
 Design and Construction

Locations of Water Quality Monitoring Stations

SCALE	N.T.S	DATE	AUG 2016	
CHECK	JF	DRAWN	JW	
PROJECT NO.	MA16034	FIGURE NO.	5	REV —

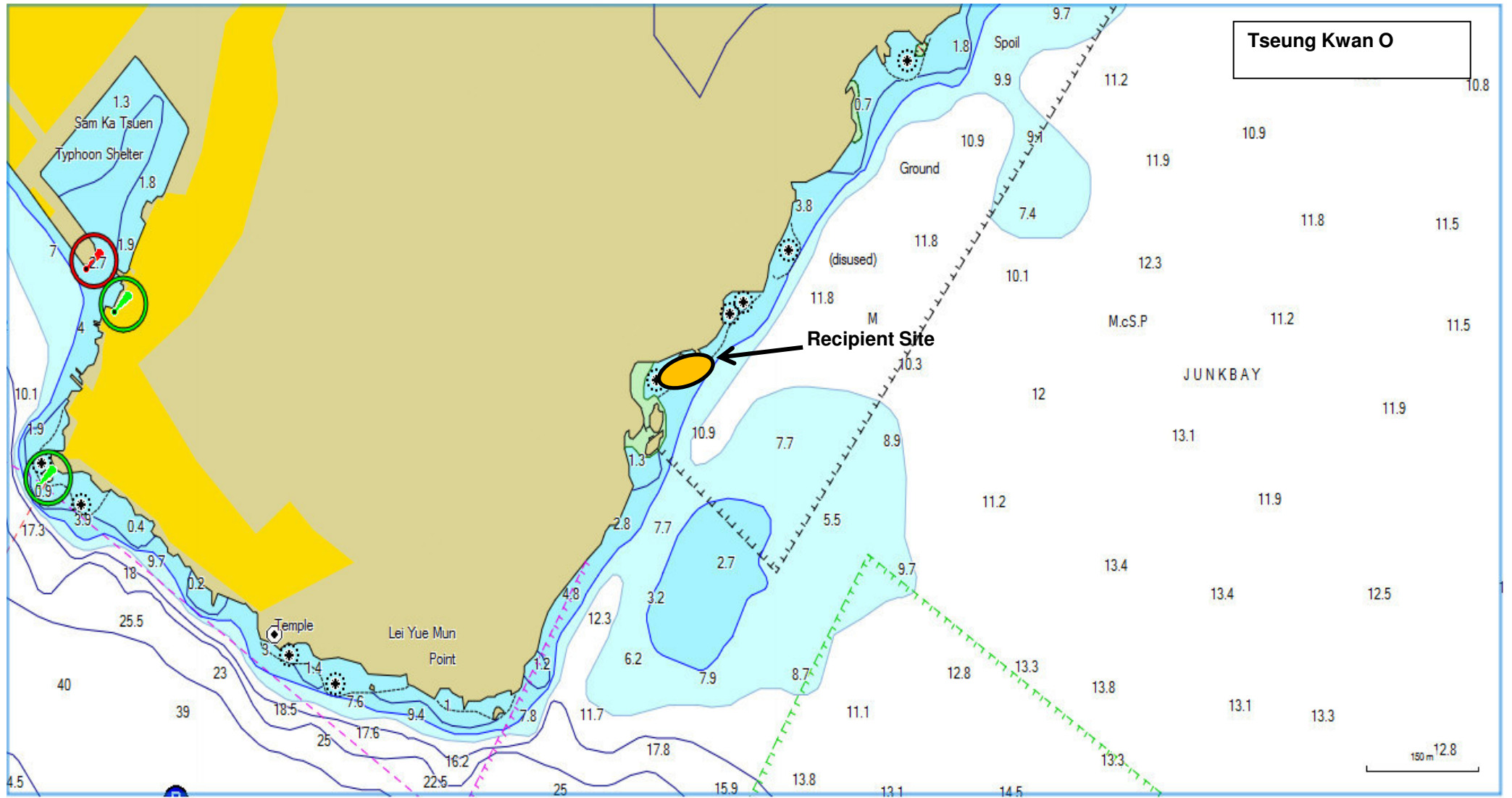


Title Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
 Locations of Landfill Gas Monitoring

Scale N.T.S
 Date Dec-16

Project No. MA16034
 Figure 6



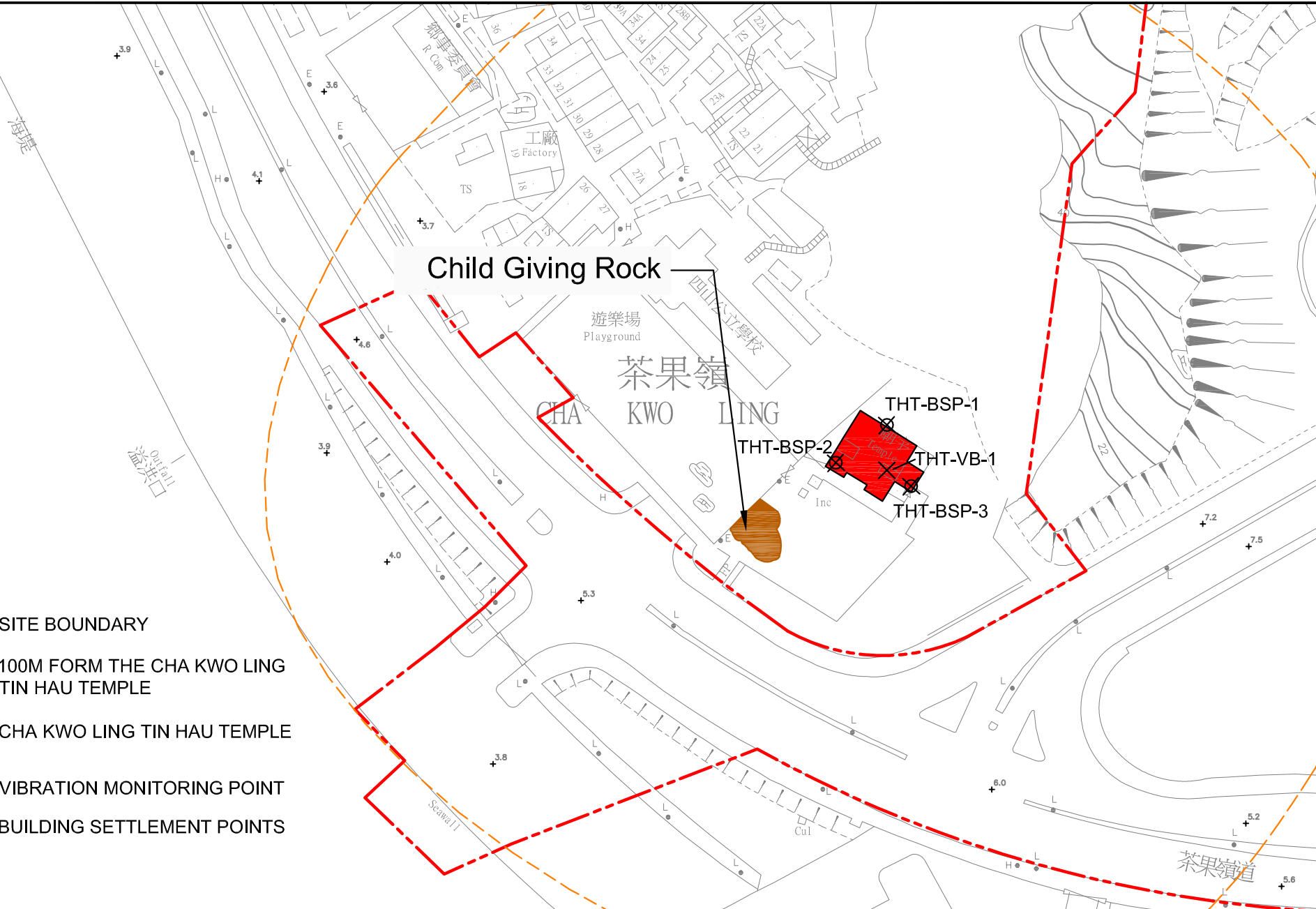
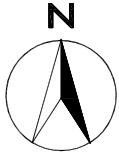


Title Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
 Location of Post-translocation Coral Monitoring

Scale N.T.S
 Date Mar-17

Project No. MA16034
 Figure 7





LEGEND

- - - - - SITE BOUNDARY
- - - - - 100M FORM THE CHA KWO LING TIN HAU TEMPLE
- CHA KWO LING TIN HAU TEMPLE
- X VIBRATION MONITORING POINT
- ⊗ BUILDING SETTLEMENT POINTS



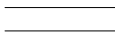


SCALE	N.T.S.	DATE	FEB 2018	
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JOB No.	MA16034	FIGURE NO.	8	REV -



Ocean Shore

TIU KENG
LENG

Legend

-  MARINE AREA EMBAYED BY RECLAMATION
-  RECLAMATION FOOTPRINT
-  O KING ROAD
-  LOCATION OF OUTFALL
-  MONITORING STATION W2

SCALE	1:4000@A4	DATE	NOV 2019	
CHECK	BC	DRAWN	KC	
PROJECT NO.	MA16034	FIGURE NO.	9	REV —

**APPENDIX A
ACTION AND LIMIT LEVELS**

APPENDIX A – Action and Limit Levels

Air Quality

1-hr TSP

Monitoring Stations	Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	Tin Hau Temple	275	500
AM2	Sai Tso Wan Recreation Ground	273	
AM3	Yau Lai Estate Bik Lai House	271	
AM4	Sitting-out Area at Cha Kwo Ling Village	278	
AM5(A)	Tseung Kwan O DSD Desilting Compound	273	
AM6(A)	Park Central, L1/F Open Space Area	285	

24-hr TSP

Monitoring Stations	Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	Tin Hau Temple	173	260
AM2	Sai Tso Wan Recreation Ground	192	
AM3	Yau Lai Estate Bik Lai House	167	
AM4(A)	Cha Kwo Ling Public Cargo Working Area Administrative Office	210	
AM5(A)	Tseung Kwan O DSD Desilting Compound	175	
AM6(A)	Park Central, L1/F Open Space Area	165	

Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) ⁽¹⁾
1900-2300 on all days and 0700-2300 on general holidays (including Sundays)		60/65/70 dB(A) ⁽²⁾⁽³⁾
2300-0700 on all days		45/50/55 dB(A) ⁽²⁾⁽³⁾

¹ 70 dB(A) for schools and 65 dB(A) for schools during examination period.

² Acceptable Noise Levels for Area Sensitivity Rating of A/B/C

³ If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

Water Quality

Groundwater

Parameters	Action	Limit
DO in mg L ⁻¹	7.6	7.6
pH	6.0 – 8.9	6.0 – 9.0
BOD ₅ in mg L ⁻¹	2.0	2.0
TOC in mg L ⁻¹	Stream 1 and Stream 2: 9	Stream 1 and Stream 2: 9
	Stream 3: 6	Stream 3: 6
Total Nitrogen in mg L ⁻¹	2.0	2.1
Ammonia-N in mg L ⁻¹	0.15	0.20
Total Phosphate in mg L ⁻¹	0.05	0.05
SS in mg L ⁻¹	7.6	12.1
Turbidity in NTU	2.1	2.3

Notes:

1. For pH, non-compliance of the water quality limits occurs when monitoring result is out of the range of the limits.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity, SS, 5-day biochemical oxygen demand (BOD₅), Total organic carbon (TOC), Total Nitrogen, Ammonia-N and Total Phosphate, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
4. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

Groundwater Level Monitoring

Drill Hole No.	38568-LDH1	TKO-LBH907
Action Level (mPD)	+74.65	+17.59

Marine Water Quality

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2, 4 and 5)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u> or 120% of upstream control station's Turbidity at the same tide of the same day	<u>22.2 NTU</u> or 130% of upstream control station's Turbidity at the same tide of the same day
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
SS in mg/L (See Note 2, 4 and 5)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day	<u>6.9mg/L</u> or 130% of upstream control station's SS at the same tide of the same day
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day	<u>7.4 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u> or 120% of upstream control station's SS at the same tide of the same day	<u>7.9 mg/L</u> or 130% of upstream control station's SS at the same tide of the same day
	<u>Station M6</u>		
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.
5. Refer to Appendix I – Marine Water Quality Monitoring Results and Graphical Presentations for results of upstream control stations at each tide on each day.

Water Quality Monitoring in Temporary Marine Embayment

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 2)	Depth Average	<u>4.8 mg/L</u> ⁽⁴⁾	<u>4 mg/L</u> ⁽³⁾
	Bottom	<u>2.4 mg/L</u> ⁽⁴⁾	<u>2 mg/L</u> ⁽³⁾

Notes:

1. "depth-averaged" is calculated by taking the arithmetic means of reading of all sampling depths.
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. Current Water Quality Objectives (WQOs) for marine waters of Hong Kong
4. As an alert for adverse water quality impact, the Action Level is set as 120% of the Current WQOs for marine waters of Hong Kong.

Ecology

Post-translocation Coral Monitoring

Parameter	Action Level Definition	Limit Level Definition
Mortality	If during Impact Monitoring a 15% increase in the percentage of partial mortality on hard corals occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Action Level is exceeded.	If during the Impact Monitoring a 25% increase in the percentage of partial mortality occurs at more than 20% of the tagged coral at any one Impact Monitoring Site that is not recorded at the Control Site, then the Limit Level is exceeded.

Landfill Gas Monitoring

Parameter	Limit Level
Oxygen	<19%
	<18%
Methane	>10% LEL (i.e. > 0.5% by volume)
	>20% LEL (i.e. > 1% by volume)
Carbon Dioxide	>0.5%
	>1.5%

Alert, Alarm, Action Levels for Built Heritage Monitoring

Parameter	Alert Level	Alarm Level	Action Level
Vibration	ppv:4.5mm/s	ppv: 4.8mm/s	ppv: 5mm/s Maximum Allowable Vibration Amplitude: 0.1mm
Building Settlement Point	6mm	8mm	10mm
Building Tilting	1:2000	1:1500	1:1000

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 2-Dec-21
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 2-Feb-22
 Model No.: LD-5R
 Serial No.: 972781
 Equipment No.: SA-01-10 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 734 CPM
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 734 CPM

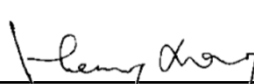
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	67.0	123.8
2	58.0	117.9
3	47.0	109.0
Average	57.3	116.9
By Linear Regression of Y on X Slope , mw = <u>0.7425</u> Intercept, bw = <u>74.3286</u> Correlation coefficient* = <u>0.9983</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	116.9	
Particulate Concentration by Dust Meter (µg/m ³)	57.3	
Measureing time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>2.0</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 2-Dec-21
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 2-Feb-22
 Model No.: LD-5R
 Serial No.: 972780
 Equipment No.: SA-01-09 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 739 CPM
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 739 CPM

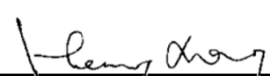
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	64.0	123.8
2	59.0	117.9
3	51.0	109.0
Average	58.0	116.9
By Linear Regression of Y on X Slope , mw = <u>1.1360</u> Intercept, bw = <u>51.0093</u> Correlation coefficient* = <u>0.9999</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)		116.9
Particulate Concentration by Dust Meter (µg/m ³)		58.0
Measureing time, (min)		60.0
Set Correlation Factor , SCF SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)] <u>2.0</u>		

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 2-Dec-21
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 2-Feb-22
 Model No.: LD-5R
 Serial No.: 972778
 Equipment No.: SA-01-07 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 735 CPM
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 735 CPM

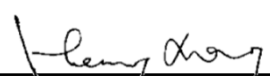
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	67.0	123.8
2	59.0	117.9
3	50.0	109.0
Average	58.7	116.9
By Linear Regression of Y on X Slope , mw = <u>0.8730</u> Intercept, bw = <u>65.6816</u> Correlation coefficient* = <u>0.9966</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	116.9	
Particulate Concentration by Dust Meter (µg/m ³)	58.7	
Measureing time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>2.0</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 2-Dec-21
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 2-Feb-22
 Model No.: LD-5R
 Serial No.: 972777
 Equipment No.: SA-01-06 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 645
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 645


Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	65.0	123.8
2	58.5	117.9
3	47.5	109.0
Average	57.0	116.9
By Linear Regression of Y on X Slope , mw = <u>0.8419</u> Intercept, bw = <u>68.9144</u> Correlation coefficient* = <u>0.9995</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)	116.9	
Particulate Concentration by Dust Meter (µg/m ³)	57.0	
Measureing time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)]	<u>2.1</u>	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/05/0033

Project No. AM1 - Tin Hau Temple
 Date: 9-Dec-21 Next Due Date: 9-Feb-22 Operator: SK
 Equipment No.: A-01-05 Model No.: GS2310 Serial No. 10599

Ambient Condition			
Temperature, Ta (K)	<u>293.7</u>	Pressure, Pa (mmHg)	<u>766.6</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	<u>11-Jan-22</u>	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.4</u>	3.70	63.40	<u>9.2</u>	3.07
2	<u>10.2</u>	3.23	55.32	<u>7.0</u>	2.68
3	<u>7.6</u>	2.79	47.76	<u>5.2</u>	2.31
4	<u>5.4</u>	2.35	40.27	<u>3.3</u>	1.84
5	<u>3.0</u>	1.75	30.03	<u>2.0</u>	1.43

By Linear Regression of Y on X

Slope, mw = 0.0501 Intercept, bw = -0.1103

Correlation coefficient* = 0.9979

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


From the TSP Field Calibration Curve, take Qstd = 43 CFM

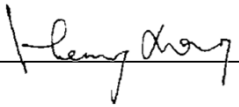
From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.09

Remarks: _____

Conducted by: Wong Shing Kwai Signature:  Date: 9-Dec-21

Checked by: Henry Leung Signature:  Date: 9-Dec-21

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/08/0033

Project No. AM2 - Sai Tso Wan Recreation Ground
 Date: 9-Dec-21 Next Due Date: 9-Feb-22 Operator: SK
 Equipment No.: A-01-08 Model No.: GS2310 Serial No. 1287

Ambient Condition			
Temperature, Ta (K)	<u>293.7</u>	Pressure, Pa (mmHg)	<u>766.6</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	<u>11-Jan-22</u>				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X-axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.4</u>	3.70	63.40	<u>9.2</u>	3.07
2	<u>10.4</u>	3.26	55.86	<u>6.8</u>	2.64
3	<u>8.0</u>	2.86	49.00	<u>5.1</u>	2.28
4	<u>5.4</u>	2.35	40.27	<u>3.4</u>	1.87
5	<u>3.0</u>	1.75	30.03	<u>2.0</u>	1.43

By Linear Regression of Y on X

Slope, mw = 0.0489 Intercept, bw = -0.0779
 Correlation coefficient* = 0.9982

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


From the TSP Field Calibration Curve, take Qstd = 43 CFM

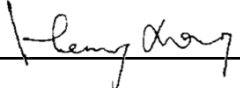
From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.01

Remarks: _____

Conducted by: Wong Shing Kwai Signature:  Date: 9-Dec-21

Checked by: Henry Leung Signature:  Date: 9-Dec-21

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/03/0033

Project No. AM3 - Yau Lai Estate, Bik Lai House
 Date: 9-Dec-21 Next Due Date: 9-Feb-22 Operator: SK
 Equipment No.: A-01-03 Model No.: GS2310 Serial No. 10379

Ambient Condition			
Temperature, Ta (K)	293.7	Pressure, Pa (mmHg)	766.6

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	11-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	13.4	3.70	63.40	9.2	3.07
2	10.4	3.26	55.86	6.9	2.66
3	8.2	2.90	49.61	5.4	2.35
4	5.4	2.35	40.27	3.5	1.89
5	2.9	1.72	29.52	2.0	1.42

By Linear Regression of Y on X

Slope, $m_w =$ 0.0485 Intercept, $b_w =$ -0.0348
 Correlation coefficient* = 0.9991

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


From the TSP Field Calibration Curve, take Qstd = 43 CFM

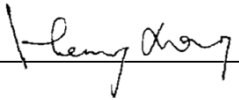
From the Regression Equation, the "Y" value according to

$$m_w \times Qstd + b_w = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (m_w \times Qstd + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.10

Remarks: _____

Conducted by: Wong Shing Kwai Signature:  Date: 9-Dec-21

Checked by: Henry Leung Signature:  Date: 9-Dec-21

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/54/0033

Project No. AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office
 Date: 9-Dec-21 Next Due Date: 9-Feb-22 Operator: SK
 Equipment No.: A-01-54 Model No.: TE-5170 Serial No. 1536

Ambient Condition			
Temperature, Ta (K)	<u>293.7</u>	Pressure, Pa (mmHg)	<u>766.6</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	<u>11-Jan-22</u>	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.4</u>	<u>3.70</u>	<u>63.40</u>	<u>9.6</u>	<u>3.13</u>
2	<u>10.8</u>	<u>3.32</u>	<u>56.92</u>	<u>7.6</u>	<u>2.79</u>
3	<u>7.8</u>	<u>2.83</u>	<u>48.38</u>	<u>5.4</u>	<u>2.35</u>
4	<u>5.8</u>	<u>2.44</u>	<u>41.73</u>	<u>3.6</u>	<u>1.92</u>
5	<u>3.0</u>	<u>1.75</u>	<u>30.03</u>	<u>2.0</u>	<u>1.43</u>


By Linear Regression of Y on X

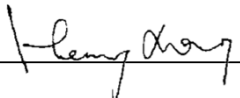
Slope, mw = 0.0519 Intercept, bw = -0.1696
 Correlation coefficient* = 0.9978

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation	
From the TSP Field Calibration Curve, take Qstd = 43 CFM	
From the Regression Equation, the "Y" value according to	
$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$	
Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ <u>4.15</u>	

Remarks: _____

Conducted by: Wong Shing Kwai Signature:  Date: 9-Dec-21

Checked by: Henry Leung Signature:  Date: 9-Dec-21

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/37/0033

Project No. AM5(A) - Tseung Kwan O DSD Desilting Compound
 Date: 9-Dec-21 Next Due Date: 9-Feb-22 Operator: SK
 Equipment No.: A-01-37 Model No.: GS2310 Serial No. 1704

Ambient Condition			
Temperature, Ta (K)	<u>293.7</u>	Pressure, Pa (mmHg)	<u>766.6</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	<u>11-Jan-22</u>	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.4</u>	<u>3.70</u>	<u>63.40</u>	<u>9.4</u>	<u>3.10</u>
2	<u>10.7</u>	<u>3.31</u>	<u>56.66</u>	<u>7.2</u>	<u>2.71</u>
3	<u>8.5</u>	<u>2.95</u>	<u>50.51</u>	<u>5.8</u>	<u>2.44</u>
4	<u>5.8</u>	<u>2.44</u>	<u>41.73</u>	<u>3.4</u>	<u>1.87</u>
5	<u>3.0</u>	<u>1.75</u>	<u>30.03</u>	<u>2.0</u>	<u>1.43</u>

By Linear Regression of Y on X

Slope, mw = 0.0509 Intercept, bw = -0.1576
 Correlation coefficient* = 0.9956

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


From the TSP Field Calibration Curve, take Qstd = 43 CFM

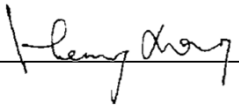
From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.03

Remarks: _____

Conducted by: Wong Shing Kwai Signature:  Date: 9-Dec-21

Checked by: Henry Leung Signature:  Date: 9-Dec-21

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA16034/07/0032

Project No. AM6 - Park Central
 Date: 4-Nov-21 Next Due Date: 4-Jan-22 Operator: SK
 Equipment No.: A-01-07 Model No.: GS2310 Serial No. 10592

Ambient Condition			
Temperature, Ta (K)	298.5	Pressure, Pa (mmHg)	761

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	11-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	12.6	3.55	60.76	8.5	2.91
2	9.3	3.05	52.21	6.3	2.51
3	7.5	2.74	46.89	4.8	2.19
4	4.9	2.21	37.91	3.2	1.79
5	3.0	1.73	29.68	2.1	1.45

By Linear Regression of Y on X

Slope, mw = 0.0476 Intercept, bw = 0.0052
 Correlation coefficient* = 0.9984

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.21

Remarks: _____

Conducted by: Wong Shing Kwai Signature: Date: 4-Nov-21

Checked by: Henry Leung Signature: Date: 4-Nov-21



APPLICANT: Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,

Test Report No.:	00122
Date of Issue:	2021-05-12
Date Received:	2021-05-07
Test Period	2021-05-10 to 2021-05-10
Next Due Date:	2022-05-10

ATTN: Mr. Henry Leung

Certificate of Calibration

Item for calibration

Description	Integrating Sound Level Meter
Manufacturer	BSWA Technology
Model No.	BSWA 308
Serial No.	580156
Microphone No.	580804
Equipment No.	N-12-06

Test conditions:

Room Temperature : 22-25 degree Celsius
 Relative Humidity : 35-70%

Method reference:

The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01



Test Report

Results:

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.0	0.0	± 1.5
114.0	114.0	+0.1	± 1.5

REMARK:

1. The indication value was obtained from the average of ten replicated measurement.
2. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC 17025.

-----End of Report-----

PREPARED AND CHECKED BY:

For and On Behalf of **High Precision Chemical Testing Limited**

Laboratory Director (CHAN Hon-Fai)



Calibration Certificate

0025915

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : SVAN959 SLM Serial No. /Ref. No. : 11275 / N-08-01 Object 2 : Microphone Serial No. /Ref. No. : 22452
Customer Code : SVEC09005	Manufacturer : SVANTEK
Date of calibration: 22/01/2021 Date of the recommended re-calibration: 22/01/2022	Certificate No.: 0025915 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.9dB	-0.1dB	+/- 1.5dB	1
114.0dB	113.8dB	-0.2dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.
2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
4. HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
5. The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Approved by

Quality Manager



Calibration Certificate

0025913

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : SVAN957 SLM Serial No. /Ref. No. : 23852 / N-08-11 Object 2 : Microphone Serial No. /Ref. No. : 35989
Customer Code : SVEC09005	Manufacturer : Svantek
Date of calibration: 22/01/2021 Date of the recommended re-calibration: 22/01/2022	Certificate No.: 0025913 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.5dB	-0.5dB	+/- 1.5dB	1
114.0dB	113.3dB	-0.7dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty


+/- 0.2dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.


Measured value(s) **within** the allowable deviation.

Performed by



Calibration Technician

Approved by



Quality Manager



Calibration Certificate

0025914

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : SVAN957 SLM Serial No. /Ref. No. : 23851 / N-08-12 Object 2 : Microphone Serial No. /Ref. No. : 43676
Customer Code : SVEC09005	Manufacturer : Svantek
Date of calibration: 22/01/2021 Date of the recommended re-calibration: 22/01/2022	Certificate No.: 0025914 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.6dB	-0.4dB	+/- 1.5dB	1
114.0dB	113.5dB	-0.5dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2 dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Approved by

Quality Manager

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00152
Application No. : HP00034

Issue Date : 19 Nov 2021

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Integrating Sound Level Meter.

Equipment No.: : N-12-01

Manufacturer: : BSWA Technology

Other information :

Model No.	BSWA 308
Serial No.	570183
Microphone No.	570605

Date Received : 10 Nov 2021

Test Period : 10 Nov 2021 to 17 Nov 2021

Test Requested : Performance checking for Sound Level Meter

Test Method : The Sound Level Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : **1. Information of the sample description provided by the Applicant.**
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

A handwritten signature in black ink, appearing to read 'Lee Wai Kit', is written over a horizontal line.

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00152
Application No. : HP00034

Issue Date : 19 Nov 2021

Certificate of Calibration

Measuring equipment :

Description	Sound Calibrator
Manufacturer	Brüel & Kjær
Model No.	TYPE 4231
Serial No.	2326353
Equipment No.	N-02-01

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+0.1	± 1.5
114.0	114.0	0.0	± 1.5

- Note** : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00150
Application No. : HP00032

Issue Date : 16 Nov 2021

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be Sound Level Calibrator.

Equipment No.: : N-13-01

Manufacturer: : SOUNDTEK

Other information :

Model No.	ST-120
Serial No.	181001608

Date Received : 05 Nov 2021

Test Period : 08 Nov 2021 to 12 Nov 2021

Test Requested : Performance checking for Sound Level Calibrator

Test Method : The Sound Level Meter and Calibrator has been calibrated in accordance with the documented procedures and using standard and instrument which are recommended by the manufacturer, or equivalent.

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : **1. Information of the sample description provided by the Applicant.**
2. The result(s) relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

Lee Wai Kit
Laboratory Manager

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park
18 On Lai Street, Shatin
NT, Hong Kong
Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00150
Application No. : HP00032

Issue Date : 16 Nov 2021

Certificate of Calibration

Measuring equipment :	Description	Sound Calibrator
	Manufacturer	Brüel & Kjær
	Model No.	TYPE 4231
	Serial No.	2326353
	Equipment No.	N-02-01
Measuring equipment :	Description	Sound Meter
	Manufacturer	BSWA Technology
	Model No.	BSWA 308
	Serial No.	570188
	Microphone No.	570608
	Equipment No.	N-12-03

Test Result :

Reference value, dB	Indication value, dB	Deviation, dB	Allowed deviation, dB
94.0	94.1	+0.1	± 0.3
114.0	114.0	0.0	± 0.5

Note : 1. "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.
2. The indication value was obtained from the average of ten replicated measurement.

- End of report -

High Precision Chemical Testing Ltd.

Rm 1904, Technology Park

18 On Lai Street, Shatin

NT, Hong Kong

Tel: +852 3841 4388 Website: <https://www.hpct.com.hk>



Report No. : 00146
Application No. : HP00030

Issue Date : 04 Nov 2021

Certificate of Calibration

Applicant : Cinotech Consultants Limited
RM 1710, Technology Park,
18 On Lai Street,
Shatin, N.T., Hong Kong

Sample Description : Submitted equipment stated to be YSI EXO1 Multi-parameter Sonde.

Equipment No.: : SW-08-166

Manufacturer: : YSI Incorporated, a Xylem brand

Other information :

Description:	Serial No.
- EXO Optical DO Sensor, Ti	17K101625
- EXO conductivity/Temperature Sensor, Ti	17H103448
- EXO Turbidity Sensor, Ti	17K100333
- EXO pH Sensor Assembly, Guarded, Ti	17B100260

Date Received : 27 Oct 2021

Test Period : 27 Oct 2021 to 4 Nov 2021

Test Requested : Performance checking for Conductivity, Temperature, pH, Dissolved oxygen (D.O.) and Turbidity

Test Method : According to manufacturer instruction manual, APHA 23rd Ed 4500-O G

Test conditions : Room Temperature: 22-25 degree Celsius
Relative Humidity: 35-70%

Test Result : Refer to the test result(s) on page 2.

Remark : 1. Information of the sample description provided by the Applicant.
2. The results relate only to the items tested or calibrated.

For and on behalf of
HIGH PRECISION CHEMICAL TESTING LIMITED

A handwritten signature in black ink, appearing to be 'Lee Wai Kit', written over a horizontal line.

Lee Wai Kit
Laboratory Manager

Report No. : 00146
Application No. : HP00030

Issue Date : 04 Nov 2021

Certificate of CalibrationTest Result : **Conductivity performance checking**

Expected Reading (mS/cm)	Instrument Readings (mS/cm)	Acceptance Criteria	Comment
146.9	148.1	140-154	Pass
1412	1390	1341-1483	Pass
6667	6556	6334-7000	Pass
12890	12695	12246-13535	Pass
58670	58297	55737-61604	Pass

Temperature performance checking

Expected Reading (°C)	Instrument Readings (°C)	Acceptance Criteria	Comment
10.0	10.566	±2.0	Pass
25.0	25.421	±2.0	Pass
35.0	35.330	±2.0	Pass

pH performance checking

Expected Reading (pH unit)	Instrument Readings (pH unit)	Acceptance Criteria	Comment
4.01	4.03	4.0 ± 0.2	Pass
7.00	7.07	7.0 ± 0.2	Pass
10.01	10.11	10.0 ± 0.2	Pass

D.O. performance checking

Expected Reading	Instrument Readings (mg/L)	Acceptance Criteria	Comment
0.00	0.18	--	--
8.26	8.21	±0.20	Pass

Turbidity performance checking

Expected Reading(NTU)	Instrument Readings (NTU)	Acceptance Criteria	Comment
0	0.08	--	--
5	5.20	4.5-5.5	Pass
50	50.12	45-55	Pass
100	100.32	95-105	Pass

Note : "Instrument Readings" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

- End of report -

**APPENDIX B
COPIES OF CALIBRATION
CERTIFICATES**

APPENDIX C
WEATHER INFORMATION

Table I: Weather over the Reporting Month

December 2021				
Table I				
Day	Mean Pressure (hPa)	Air Temperature	Mean Relative Humidity (%)	Total Rainfall (mm)
		Mean (°C)		
1	1021.5	17.3	40.0	0.0
2	1021.8	17.4	42.0	0.0
3	1021.5	18.0	35.0	0.0
4	1022.2	18.1	46.0	0.0
5	1021.2	19.1	55.0	0.0
6	1020.3	19.2	59.0	0.0
7	1020.9	19.9	65.0	0.0
8	1022.3	20.1	67.0	0.0
9	1022.3	20.2	72.0	0.0
10	1020.7	20.9	73.0	0.0
11	1020.8	21.4	74.0	0.0
12	1021.0	21.5	75.0	0.0
13	1021.6	19.4	67.0	0.0
14	1018.6	20.5	72.0	Trace
15	1016.1	21.5	78.0	0.2
16	1015.8	23.2	81.0	Trace
17	1018.9	21.7	69.0	0.0
18	1022.8	18.1	58.0	0.0
19	1021.8	17.9	51.0	0.0
20	1017.6	17.2	78.0	9.4
21	1013.5	17.3	88.0	2.4
22	1016.5	19.3	80.0	Trace
23	1016.8	19.9	77.0	0.8
24	1017.2	19.9	84.0	1.7
25	1021.2	19.6	75.0	Trace
26	1025.5	15.0	78.0	3.5
27	1027.1	12.0	81.0	1.3
28	1024.4	15.3	74.0	0.2
29	1023.2	18.4	74.0	0.0
30	1024.6	18.1	77.0	0.0
31	1025.0	18.0	78.0	Trace

Appendix C - Weather Conditions during Monitoring Period

December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
1 Dec 2021	1:00 AM	ESE	0.4
1 Dec 2021	12:00 AM	NNW	0.4
1 Dec 2021	1:00 AM	ESE	0.4
1 Dec 2021	2:00 AM	SE	0.4
1 Dec 2021	3:00 AM	SE	0.4
1 Dec 2021	4:00 AM	SE	0.4
1 Dec 2021	5:00 AM	SE	0.4
1 Dec 2021	6:00 AM	ESE	1.3
1 Dec 2021	7:00 AM	SE	0.4
1 Dec 2021	8:00 AM	NW	0.4
1 Dec 2021	9:00 AM	NW	0.4
1 Dec 2021	10:00 AM	NNW	1.3
1 Dec 2021	11:00 AM	NNW	0.9
1 Dec 2021	12:00 PM	NNW	1.3
1 Dec 2021	1:00 PM	NNW	1.3
1 Dec 2021	2:00 PM	NNE	1.3
1 Dec 2021	3:00 PM	NNE	1.3
1 Dec 2021	4:00 PM	ENE	1.8
1 Dec 2021	5:00 PM	SE	1.3
1 Dec 2021	6:00 PM	NE	1.3
1 Dec 2021	7:00 PM	NE	1.8
1 Dec 2021	8:00 PM	SE	1.8
1 Dec 2021	9:00 PM	SE	2.2
1 Dec 2021	10:00 PM	N	0.9
1 Dec 2021	11:00 PM	E	1.3
2 Dec 2021	12:00 AM	ESE	1.3
2 Dec 2021	1:00 AM	E	1.3
2 Dec 2021	2:00 AM	E	1.3
2 Dec 2021	3:00 AM	E	1.8
2 Dec 2021	4:00 AM	E	1.3
2 Dec 2021	5:00 AM	E	1.3
2 Dec 2021	6:00 AM	ESE	1.8
2 Dec 2021	7:00 AM	E	1.8
2 Dec 2021	8:00 AM	E	2.2
2 Dec 2021	9:00 AM	SE	1.3
2 Dec 2021	10:00 AM	SE	3.1
2 Dec 2021	11:00 AM	E	3.1
2 Dec 2021	12:00 PM	ESE	3.6
2 Dec 2021	1:00 PM	E	2.2
2 Dec 2021	2:00 PM	E	1.8
2 Dec 2021	3:00 PM	ESE	1.8
2 Dec 2021	4:00 PM	ESE	1.8
2 Dec 2021	5:00 PM	E	1.8
2 Dec 2021	6:00 PM	ESE	1.8
2 Dec 2021	7:00 PM	E	1.8

Appendix C - Weather Conditions during Monitoring Period

December 2021				
Table II: Wind Speed and Directions				
November 2021	Time	Direction	Wind Speed m-s	
	2 Dec 2021	8:00 PM	W	1.3
	2 Dec 2021	9:00 PM	W	1.3
	2 Dec 2021	10:00 PM	W	1.3
	2 Dec 2021	11:00 PM	W	0.9
	2 Dec 2021	12:00 AM	W	0.9
	3 Dec 2021	1:00 AM	NNW	0.9
	3 Dec 2021	2:00 AM	ENE	0.9
	3 Dec 2021	3:00 AM	NW	0.9
	3 Dec 2021	4:00 AM	W	1.8
	3 Dec 2021	5:00 AM	W	1.3
	3 Dec 2021	6:00 AM	W	1.3
	3 Dec 2021	7:00 AM	NNW	1.3
	3 Dec 2021	8:00 AM	NW	1.8
	3 Dec 2021	9:00 AM	W	1.3
	3 Dec 2021	10:00 AM	NW	1.8
	3 Dec 2021	11:00 AM	NW	1.3
	3 Dec 2021	12:00 PM	W	0.9
	3 Dec 2021	1:00 PM	NW	1.3
	3 Dec 2021	2:00 PM	WNW	1.3
	3 Dec 2021	3:00 PM	NW	2.2
	3 Dec 2021	4:00 PM	WNW	1.8
	3 Dec 2021	5:00 PM	NW	0.4
	3 Dec 2021	6:00 PM	NW	0.9
	3 Dec 2021	7:00 PM	W	1.3
	3 Dec 2021	8:00 PM	W	1.3
	3 Dec 2021	9:00 PM	WNW	1.3
	3 Dec 2021	10:00 PM	SE	0.9
	3 Dec 2021	11:00 PM	SE	0.9
	3 Dec 2021	12:00 AM	E	0.9
	4 Dec 2021	1:00 AM	ESE	0.9
	4 Dec 2021	2:00 AM	ESE	0.9
	4 Dec 2021	3:00 AM	E	1.8
	4 Dec 2021	4:00 AM	ESE	1.3
	4 Dec 2021	5:00 AM	E	1.3
	4 Dec 2021	6:00 AM	E	1.3
	4 Dec 2021	7:00 AM	NNW	1.3
	4 Dec 2021	8:00 AM	E	1.3
	4 Dec 2021	9:00 AM	E	1.8
	4 Dec 2021	10:00 AM	SE	1.8
	4 Dec 2021	11:00 AM	ESE	2.7
	4 Dec 2021	12:00 PM	ESE	1.8
	4 Dec 2021	1:00 PM	ESE	1.8
	4 Dec 2021	2:00 PM	W	1.8
	4 Dec 2021	3:00 PM	W	1.8
	4 Dec 2021	4:00 PM	W	1.8

Appendix C - Weather Conditions during Monitoring Period

December 2021				
Table II: Wind Speed and Directions				
November 2021	Time	Direction	Wind Speed m-s	
	4 Dec 2021	5:00 PM	W	1.3
	4 Dec 2021	6:00 PM	W	1.3
	4 Dec 2021	7:00 PM	NNW	1.3
	4 Dec 2021	8:00 PM	ENE	1.3
	4 Dec 2021	9:00 PM	NW	1.3
	4 Dec 2021	10:00 PM	W	1.3
	4 Dec 2021	11:00 PM	W	0.9
	4 Dec 2021	12:00 AM	W	0.9
	5 Dec 2021	1:00 AM	NNW	0.9
	5 Dec 2021	2:00 AM	NW	0.9
	5 Dec 2021	3:00 AM	W	0.9
	5 Dec 2021	4:00 AM	NW	1.8
	5 Dec 2021	5:00 AM	NW	1.3
	5 Dec 2021	6:00 AM	W	1.3
	5 Dec 2021	7:00 AM	NW	0.9
	5 Dec 2021	8:00 AM	WNW	1.3
	5 Dec 2021	9:00 AM	NW	0.9
	5 Dec 2021	10:00 AM	WNW	0.9
	5 Dec 2021	11:00 AM	NW	0.9
	5 Dec 2021	12:00 PM	NW	0.4
	5 Dec 2021	1:00 PM	W	0.9
	5 Dec 2021	2:00 PM	W	0.9
	5 Dec 2021	3:00 PM	WNW	0.4
	5 Dec 2021	4:00 PM	WNW	0.4
	5 Dec 2021	5:00 PM	WNW	0.4
	5 Dec 2021	6:00 PM	WNW	0.9
	5 Dec 2021	7:00 PM	N	0.9
	5 Dec 2021	8:00 PM	E	1.3
	5 Dec 2021	9:00 PM	ESE	1.8
	5 Dec 2021	10:00 PM	E	1.8
	5 Dec 2021	11:00 PM	ESE	1.3
	5 Dec 2021	12:00 AM	E	1.8
	6 Dec 2021	1:00 AM	ESE	3.1
	6 Dec 2021	2:00 AM	E	3.6
	6 Dec 2021	3:00 AM	ESE	2.2
	6 Dec 2021	4:00 AM	E	3.1
	6 Dec 2021	5:00 AM	E	2.2
	6 Dec 2021	6:00 AM	ESE	1.8
	6 Dec 2021	7:00 AM	E	2.2
	6 Dec 2021	8:00 AM	ESE	2.7
	6 Dec 2021	9:00 AM	E	1.8
	6 Dec 2021	10:00 AM	E	1.8
	6 Dec 2021	11:00 AM	ESE	2.2
	6 Dec 2021	12:00 PM	ESE	1.8
	6 Dec 2021	1:00 PM	ESE	1.3

Appendix C - Weather Conditions during Monitoring Period

December 2021				
Table II: Wind Speed and Directions				
November 2021	Time	Direction	Wind Speed m-s	
	6 Dec 2021	2:00 PM	ESE	0.9
	6 Dec 2021	3:00 PM	ESE	0.9
	6 Dec 2021	4:00 PM	ESE	1.3
	6 Dec 2021	5:00 PM	SE	0.9
	6 Dec 2021	6:00 PM	NNW	1.3
	6 Dec 2021	7:00 PM	NNW	1.3
	6 Dec 2021	8:00 PM	WNW	1.3
	6 Dec 2021	9:00 PM	WNW	0.9
	6 Dec 2021	10:00 PM	NNW	0.9
	6 Dec 2021	11:00 PM	ESE	0.9
	6 Dec 2021	12:00 AM	ESE	0.9
	7 Dec 2021	1:00 AM	ESE	0.9
	7 Dec 2021	2:00 AM	ESE	1.8
	7 Dec 2021	3:00 AM	SE	1.3
	7 Dec 2021	4:00 AM	ESE	1.3
	7 Dec 2021	5:00 AM	ESE	1.3
	7 Dec 2021	6:00 AM	SE	0.9
	7 Dec 2021	7:00 AM	ESE	0.9
	7 Dec 2021	8:00 AM	ESE	1.3
	7 Dec 2021	9:00 AM	E	1.8
	7 Dec 2021	10:00 AM	ESE	1.8
	7 Dec 2021	11:00 AM	E	1.3
	7 Dec 2021	12:00 PM	WNW	1.3
	7 Dec 2021	1:00 PM	NW	0.9
	7 Dec 2021	2:00 PM	SE	0.9
	7 Dec 2021	3:00 PM	WNW	0.9
	7 Dec 2021	4:00 PM	W	0.9
	7 Dec 2021	5:00 PM	WNW	0.9
	7 Dec 2021	6:00 PM	NNW	0.9
	7 Dec 2021	7:00 PM	WNW	0.4
	7 Dec 2021	8:00 PM	NW	0.4
	7 Dec 2021	9:00 PM	WNW	0.4
	7 Dec 2021	10:00 PM	SE	0.0
	7 Dec 2021	11:00 PM	WNW	0.4
	7 Dec 2021	12:00 AM	WNW	0.9
	8 Dec 2021	1:00 AM	NW	0.9
	8 Dec 2021	2:00 AM	W	0.9
	8 Dec 2021	3:00 AM	WNW	0.4
	8 Dec 2021	4:00 AM	WNW	0.9
	8 Dec 2021	5:00 AM	WNW	0.9
	8 Dec 2021	6:00 AM	WNW	0.4
	8 Dec 2021	7:00 AM	WNW	0.4
	8 Dec 2021	8:00 AM	W	0.4
	8 Dec 2021	9:00 AM	W	0.9
	8 Dec 2021	10:00 AM	NNW	1.3

Appendix C - Weather Conditions during Monitoring Period

December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
8 Dec 2021	11:00 AM	NNW	0.9
8 Dec 2021	12:00 PM	NNW	1.8
8 Dec 2021	1:00 PM	NNW	3.1
8 Dec 2021	2:00 PM	NNW	1.3
8 Dec 2021	3:00 PM	NNW	1.3
8 Dec 2021	4:00 PM	WNW	1.3
8 Dec 2021	5:00 PM	NNW	0.9
8 Dec 2021	6:00 PM	NNW	0.9
8 Dec 2021	7:00 PM	W	0.9
8 Dec 2021	8:00 PM	WNW	0.9
8 Dec 2021	9:00 PM	WNW	0.9
8 Dec 2021	10:00 PM	NW	1.8
8 Dec 2021	11:00 PM	W	1.3
8 Dec 2021	12:00 AM	SE	1.3
9 Dec 2021	1:00 AM	SSE	0.4
9 Dec 2021	2:00 AM	SSE	0.4
9 Dec 2021	3:00 AM	SSE	0.0
9 Dec 2021	4:00 AM	SE	0.4
9 Dec 2021	5:00 AM	ESE	0.9
9 Dec 2021	6:00 AM	E	0.4
9 Dec 2021	7:00 AM	ESE	0.9
9 Dec 2021	8:00 AM	ESE	1.8
9 Dec 2021	9:00 AM	E	2.2
9 Dec 2021	10:00 AM	ESE	1.8
9 Dec 2021	11:00 AM	SE	1.8
9 Dec 2021	12:00 PM	E	1.8
9 Dec 2021	1:00 PM	ESE	1.3
9 Dec 2021	3:00 PM	SSE	1.3
9 Dec 2021	4:00 PM	SE	0.9
9 Dec 2021	5:00 PM	ESE	0.9
9 Dec 2021	6:00 PM	WNW	0.4
9 Dec 2021	7:00 PM	ESE	0.9
9 Dec 2021	8:00 PM	ESE	1.3
9 Dec 2021	9:00 PM	ESE	1.3
9 Dec 2021	10:00 PM	E	1.8
9 Dec 2021	11:00 PM	ESE	1.3
9 Dec 2021	12:00 AM	ESE	1.8
10 Dec 2021	1:00 AM	ESE	1.8
10 Dec 2021	2:00 AM	W	1.8
10 Dec 2021	3:00 AM	W	2.2
10 Dec 2021	4:00 AM	W	1.8
10 Dec 2021	5:00 AM	W	1.8
10 Dec 2021	6:00 AM	W	1.3
10 Dec 2021	7:00 AM	NNW	1.8
10 Dec 2021	8:00 AM	ENE	1.8

Appendix C - Weather Conditions during Monitoring Period

December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
10 Dec 2021	9:00 AM	NW	1.8
10 Dec 2021	10:00 AM	W	1.8
10 Dec 2021	11:00 AM	W	1.8
10 Dec 2021	12:00 PM	W	1.8
10 Dec 2021	1:00 PM	NNW	3.6
10 Dec 2021	2:00 PM	NW	4.0
10 Dec 2021	3:00 PM	W	4.5
10 Dec 2021	4:00 PM	NW	3.1
10 Dec 2021	5:00 PM	NW	4.0
10 Dec 2021	6:00 PM	W	1.8
10 Dec 2021	7:00 PM	NW	0.9
10 Dec 2021	8:00 PM	WNW	0.9
10 Dec 2021	9:00 PM	NW	0.4
10 Dec 2021	10:00 PM	WNW	0.4
10 Dec 2021	11:00 PM	NW	0.4
10 Dec 2021	12:00 AM	NW	0.9
11 Dec 2021	1:00 AM	W	1.8
11 Dec 2021	2:00 AM	W	1.8
11 Dec 2021	3:00 AM	WNW	2.2
11 Dec 2021	4:00 AM	ESE	1.8
11 Dec 2021	5:00 AM	E	1.8
11 Dec 2021	6:00 AM	E	1.3
11 Dec 2021	7:00 AM	ESE	1.8
11 Dec 2021	8:00 AM	SE	1.8
11 Dec 2021	9:00 AM	SE	1.8
11 Dec 2021	10:00 AM	ESE	1.8
11 Dec 2021	11:00 AM	ESE	1.8
11 Dec 2021	12:00 PM	NW	1.8
11 Dec 2021	1:00 PM	NW	3.6
11 Dec 2021	2:00 PM	NW	4.0
11 Dec 2021	3:00 PM	NW	4.5
11 Dec 2021	4:00 PM	NW	3.1
11 Dec 2021	5:00 PM	NW	4.0
11 Dec 2021	6:00 PM	NW	1.8
11 Dec 2021	7:00 PM	NW	0.9
11 Dec 2021	8:00 PM	W	0.9
11 Dec 2021	9:00 PM	N	0.4
11 Dec 2021	10:00 PM	NW	0.4
11 Dec 2021	11:00 PM	WNW	0.4
11 Dec 2021	12:00 AM	W	1.3
12 Dec 2021	1:00 AM	W	1.3
12 Dec 2021	2:00 AM	W	1.3
12 Dec 2021	3:00 AM	W	0.9
12 Dec 2021	4:00 AM	W	0.9
12 Dec 2021	5:00 AM	W	0.9

Appendix C - Weather Conditions during Monitoring Period

December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
12 Dec 2021	6:00 AM	W	0.9
12 Dec 2021	7:00 AM	W	0.9
12 Dec 2021	8:00 AM	W	1.8
12 Dec 2021	9:00 AM	NNW	1.3
12 Dec 2021	10:00 AM	ENE	1.3
12 Dec 2021	11:00 AM	NW	1.8
12 Dec 2021	12:00 PM	W	1.3
12 Dec 2021	1:00 PM	W	1.8
12 Dec 2021	2:00 PM	W	1.3
12 Dec 2021	3:00 PM	NNW	0.9
12 Dec 2021	4:00 PM	NW	1.3
12 Dec 2021	5:00 PM	W	0.9
12 Dec 2021	6:00 PM	NW	0.9
12 Dec 2021	7:00 PM	NW	1.3
12 Dec 2021	8:00 PM	W	1.3
12 Dec 2021	9:00 PM	NW	0.9
12 Dec 2021	10:00 PM	WNW	1.3
12 Dec 2021	11:00 PM	NW	1.8
13 Dec 2021	12:00 AM	WNW	1.8
13 Dec 2021	1:00 AM	NW	1.8
13 Dec 2021	2:00 AM	NW	1.8
13 Dec 2021	3:00 AM	W	1.3
13 Dec 2021	4:00 AM	W	0.9
13 Dec 2021	5:00 AM	WNW	0.9
13 Dec 2021	6:00 AM	ENE	0.9
13 Dec 2021	7:00 AM	NW	0.4
13 Dec 2021	8:00 AM	W	0.9
13 Dec 2021	9:00 AM	W	1.3
13 Dec 2021	10:00 AM	W	1.3
13 Dec 2021	11:00 AM	W	1.3
13 Dec 2021	12:00 PM	W	1.8
13 Dec 2021	1:00 PM	WNW	1.3
13 Dec 2021	2:00 PM	NW	1.8
13 Dec 2021	3:00 PM	NW	2.2
13 Dec 2021	4:00 PM	NW	1.3
13 Dec 2021	5:00 PM	NW	1.3
13 Dec 2021	6:00 PM	NW	1.3
13 Dec 2021	7:00 PM	NW	0.9
13 Dec 2021	8:00 PM	NW	0.9
13 Dec 2021	9:00 PM	WNW	0.9
13 Dec 2021	10:00 PM	WNW	0.9
13 Dec 2021	11:00 PM	W	0.9
14 Dec 2021	12:00 AM	WNW	1.8
14 Dec 2021	1:00 AM	NW	1.3
14 Dec 2021	2:00 AM	NW	1.3

Appendix C - Weather Conditions during Monitoring Period

December 2021				
Table II: Wind Speed and Directions				
November 2021	Time	Direction	Wind Speed m-s	
	14 Dec 2021	3:00 AM	NW	1.3
	14 Dec 2021	4:00 AM	NW	1.3
	14 Dec 2021	5:00 AM	NW	1.8
	14 Dec 2021	6:00 AM	NW	1.3
	14 Dec 2021	7:00 AM	NW	0.9
	14 Dec 2021	8:00 AM	NW	0.9
	14 Dec 2021	9:00 AM	NW	1.8
	14 Dec 2021	10:00 AM	NW	1.3
	14 Dec 2021	11:00 AM	NW	1.8
	14 Dec 2021	12:00 PM	W	1.3
	14 Dec 2021	1:00 PM	W	1.8
	14 Dec 2021	2:00 PM	W	1.3
	14 Dec 2021	3:00 PM	NW	1.8
	14 Dec 2021	4:00 PM	NW	4.0
	14 Dec 2021	5:00 PM	NW	3.6
	14 Dec 2021	6:00 PM	NW	3.6
	14 Dec 2021	7:00 PM	NW	1.3
	14 Dec 2021	8:00 PM	NW	1.3
	14 Dec 2021	9:00 PM	NW	1.3
	14 Dec 2021	10:00 PM	W	0.9
	14 Dec 2021	11:00 PM	W	1.3
	15 Dec 2021	12:00 AM	W	1.8
	15 Dec 2021	1:00 AM	W	1.3
	15 Dec 2021	2:00 AM	W	1.3
	15 Dec 2021	3:00 AM	W	0.9
	15 Dec 2021	4:00 AM	WNW	0.9
	15 Dec 2021	5:00 AM	W	0.9
	15 Dec 2021	6:00 AM	NW	0.9
	15 Dec 2021	7:00 AM	WNW	1.3
	15 Dec 2021	8:00 AM	W	1.3
	15 Dec 2021	9:00 AM	W	1.3
	15 Dec 2021	10:00 AM	NW	1.3
	15 Dec 2021	11:00 AM	NW	1.3
	15 Dec 2021	12:00 PM	NW	1.3
	15 Dec 2021	1:00 PM	NW	0.9
	15 Dec 2021	2:00 PM	NW	1.3
	15 Dec 2021	3:00 PM	W	1.3
	15 Dec 2021	4:00 PM	NW	1.3
	15 Dec 2021	5:00 PM	W	0.9
	15 Dec 2021	6:00 PM	NW	0.9
	15 Dec 2021	7:00 PM	NW	0.9
	15 Dec 2021	8:00 PM	NW	0.9
	15 Dec 2021	9:00 PM	NW	0.9
	15 Dec 2021	10:00 PM	NW	1.8
	15 Dec 2021	11:00 PM	NW	1.3

Appendix C - Weather Conditions during Monitoring Period

December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
16 Dec 2021	12:00 AM	NW	1.3
16 Dec 2021	1:00 AM	NW	1.8
16 Dec 2021	2:00 AM	NW	1.3
16 Dec 2021	3:00 AM	WNW	0.9
16 Dec 2021	4:00 AM	NW	1.3
16 Dec 2021	5:00 AM	W	0.9
16 Dec 2021	6:00 AM	W	1.3
16 Dec 2021	7:00 AM	NW	1.3
16 Dec 2021	8:00 AM	NW	2.2
16 Dec 2021	9:00 AM	NW	1.8
16 Dec 2021	10:00 AM	NW	1.8
16 Dec 2021	11:00 AM	E	1.8
16 Dec 2021	12:00 PM	NW	1.3
16 Dec 2021	1:00 PM	NW	2.7
16 Dec 2021	2:00 PM	NW	1.8
16 Dec 2021	3:00 PM	NW	1.8
16 Dec 2021	4:00 PM	NW	2.7
16 Dec 2021	5:00 PM	NW	1.8
16 Dec 2021	6:00 PM	NW	1.8
16 Dec 2021	7:00 PM	NW	1.8
16 Dec 2021	8:00 PM	NW	1.8
16 Dec 2021	9:00 PM	NW	2.2
16 Dec 2021	10:00 PM	NW	1.8
16 Dec 2021	11:00 PM	NW	0.9
17 Dec 2021	12:00 AM	NW	1.3
17 Dec 2021	1:00 AM	NE	0.9
17 Dec 2021	2:00 AM	NNE	0.4
17 Dec 2021	3:00 AM	NE	0.4
17 Dec 2021	4:00 AM	NW	0.4
17 Dec 2021	5:00 AM	N	0.4
17 Dec 2021	6:00 AM	NE	0.9
17 Dec 2021	7:00 AM	NE	0.9
17 Dec 2021	8:00 AM	NE	0.9
17 Dec 2021	9:00 AM	NW	0.9
17 Dec 2021	10:00 AM	NW	0.9
17 Dec 2021	11:00 AM	NW	0.9
17 Dec 2021	12:00 PM	NW	1.3
17 Dec 2021	1:00 PM	NW	2.2
17 Dec 2021	2:00 PM	NW	2.2
17 Dec 2021	3:00 PM	NW	2.7
17 Dec 2021	4:00 PM	NW	4.5
17 Dec 2021	5:00 PM	NW	3.1
17 Dec 2021	6:00 PM	NW	1.3
17 Dec 2021	7:00 PM	NW	1.3
17 Dec 2021	8:00 PM	NW	1.3

Appendix C - Weather Conditions during Monitoring Period

December 2021				
Table II: Wind Speed and Directions				
November 2021	Time	Direction	Wind Speed m-s	
	17 Dec 2021	9:00 PM	NW	0.9
	17 Dec 2021	10:00 PM	NE	0.9
	17 Dec 2021	11:00 PM	N	0.9
	18 Dec 2021	12:00 AM	N	0.9
	18 Dec 2021	1:00 AM	N	0.9
	18 Dec 2021	2:00 AM	N	1.8
	18 Dec 2021	3:00 AM	N	1.3
	18 Dec 2021	4:00 AM	N	1.3
	18 Dec 2021	5:00 AM	---	1.3
	18 Dec 2021	6:00 AM	---	1.3
	18 Dec 2021	7:00 AM	---	1.3
	18 Dec 2021	8:00 AM	NNW	0.9
	18 Dec 2021	9:00 AM	NNW	0.9
	18 Dec 2021	10:00 AM	NE	0.9
	18 Dec 2021	11:00 AM	NE	0.9
	18 Dec 2021	12:00 PM	NW	0.9
	18 Dec 2021	1:00 PM	NW	1.8
	18 Dec 2021	2:00 PM	NW	1.3
	18 Dec 2021	3:00 PM	NW	1.3
	18 Dec 2021	4:00 PM	NW	2.2
	18 Dec 2021	5:00 PM	W	1.3
	18 Dec 2021	6:00 PM	W	1.3
	18 Dec 2021	7:00 PM	NW	1.8
	18 Dec 2021	8:00 PM	W	1.3
	18 Dec 2021	9:00 PM	W	1.3
	18 Dec 2021	10:00 PM	W	1.3
	18 Dec 2021	11:00 PM	WNW	1.3
	19 Dec 2021	12:00 AM	W	1.3
	19 Dec 2021	1:00 AM	W	1.3
	19 Dec 2021	2:00 AM	WNW	1.3
	19 Dec 2021	3:00 AM	W	0.9
	19 Dec 2021	4:00 AM	W	0.9
	19 Dec 2021	5:00 AM	W	0.9
	19 Dec 2021	6:00 AM	W	0.9
	19 Dec 2021	7:00 AM	NW	0.9
	19 Dec 2021	8:00 AM	NW	0.9
	19 Dec 2021	9:00 AM	W	0.4
	19 Dec 2021	10:00 AM	W	0.4
	19 Dec 2021	11:00 AM	NW	0.9
	19 Dec 2021	12:00 PM	NW	1.3
	19 Dec 2021	1:00 PM	W	0.9
	19 Dec 2021	2:00 PM	WSW	0.9
	19 Dec 2021	3:00 PM	W	0.9
	19 Dec 2021	4:00 PM	NW	0.9
	19 Dec 2021	5:00 PM	W	0.9

Appendix C - Weather Conditions during Monitoring Period

December 2021				
Table II: Wind Speed and Directions				
November 2021	Time	Direction	Wind Speed m-s	
	19 Dec 2021	6:00 PM	ESE	1.8
	19 Dec 2021	7:00 PM	ESE	1.8
	19 Dec 2021	8:00 PM	E	2.2
	19 Dec 2021	9:00 PM	E	2.2
	19 Dec 2021	10:00 PM	ESE	1.3
	19 Dec 2021	11:00 PM	SE	0.9
	20 Dec 2021	12:00 AM	SE	0.4
	20 Dec 2021	1:00 AM	ESE	1.3
	20 Dec 2021	2:00 AM	ENE	0.9
	20 Dec 2021	3:00 AM	ESE	0.9
	20 Dec 2021	4:00 AM	E	1.3
	20 Dec 2021	5:00 AM	ESE	0.9
	20 Dec 2021	6:00 AM	ESE	0.9
	20 Dec 2021	7:00 AM	E	0.9
	20 Dec 2021	8:00 AM	E	1.3
	20 Dec 2021	9:00 AM	E	0.9
	20 Dec 2021	10:00 AM	ESE	1.8
	20 Dec 2021	11:00 AM	NW	1.8
	20 Dec 2021	12:00 PM	NW	1.8
	20 Dec 2021	1:00 PM	NW	2.7
	20 Dec 2021	2:00 PM	NW	3.6
	20 Dec 2021	3:00 PM	NW	2.7
	20 Dec 2021	4:00 PM	NW	4.0
	20 Dec 2021	5:00 PM	NW	2.7
	20 Dec 2021	6:00 PM	NW	1.3
	20 Dec 2021	7:00 PM	W	1.3
	20 Dec 2021	8:00 PM	W	1.3
	20 Dec 2021	9:00 PM	W	0.9
	20 Dec 2021	10:00 PM	WNW	0.9
	20 Dec 2021	11:00 PM	SE	0.9
	21 Dec 2021	12:00 AM	ESE	0.9
	21 Dec 2021	1:00 AM	ESE	0.9
	21 Dec 2021	2:00 AM	SE	1.8
	21 Dec 2021	3:00 AM	E	1.3
	21 Dec 2021	4:00 AM	ESE	1.3
	21 Dec 2021	5:00 AM	ESE	1.3
	21 Dec 2021	6:00 AM	ESE	0.9
	21 Dec 2021	7:00 AM	ESE	0.9
	21 Dec 2021	8:00 AM	E	0.9
	21 Dec 2021	9:00 AM	ESE	0.4
	21 Dec 2021	10:00 AM	NW	1.8
	21 Dec 2021	11:00 AM	NW	1.8
	21 Dec 2021	12:00 PM	NW	2.2
	21 Dec 2021	1:00 PM	NW	1.8
	21 Dec 2021	2:00 PM	NW	2.7

Appendix C - Weather Conditions during Monitoring Period

December 2021				
Table II: Wind Speed and Directions				
November 2021	Time	Direction	Wind Speed m-s	
	21 Dec 2021	3:00 PM	NW	1.8
	21 Dec 2021	4:00 PM	NW	2.7
	21 Dec 2021	5:00 PM	NE	0.9
	21 Dec 2021	6:00 PM	NW	1.8
	21 Dec 2021	7:00 PM	NW	1.8
	21 Dec 2021	8:00 PM	NW	0.9
	21 Dec 2021	9:00 PM	NW	1.8
	21 Dec 2021	10:00 PM	NW	2.2
	21 Dec 2021	11:00 PM	NW	1.8
	22 Dec 2021	12:00 AM	NW	1.3
	22 Dec 2021	1:00 AM	NW	0.4
	22 Dec 2021	2:00 AM	NW	0.4
	22 Dec 2021	3:00 AM	NW	0.9
	22 Dec 2021	4:00 AM	WNW	0.4
	22 Dec 2021	5:00 AM	WNW	0.4
	22 Dec 2021	6:00 AM	NW	0.9
	22 Dec 2021	7:00 AM	NW	0.4
	22 Dec 2021	8:00 AM	NW	1.3
	22 Dec 2021	9:00 AM	NW	0.9
	22 Dec 2021	10:00 AM	NW	1.8
	22 Dec 2021	11:00 AM	NW	1.8
	22 Dec 2021	12:00 PM	NW	1.3
	22 Dec 2021	1:00 PM	ESE	0.9
	22 Dec 2021	2:00 PM	NW	0.9
	22 Dec 2021	3:00 PM	NW	0.9
	22 Dec 2021	4:00 PM	NW	2.2
	22 Dec 2021	5:00 PM	NW	1.8
	22 Dec 2021	6:00 PM	NW	1.3
	22 Dec 2021	7:00 PM	NW	0.4
	22 Dec 2021	8:00 PM	NW	0.9
	22 Dec 2021	9:00 PM	NNW	1.3
	22 Dec 2021	10:00 PM	NW	1.3
	22 Dec 2021	11:00 PM	ESE	1.3
	23 Dec 2021	12:00 AM	ESE	0.9
	23 Dec 2021	1:00 AM	ESE	0.9
	23 Dec 2021	2:00 AM	ESE	0.9
	23 Dec 2021	3:00 AM	---	0.9
	23 Dec 2021	4:00 AM	---	0.9
	23 Dec 2021	5:00 AM	NNW	1.8
	23 Dec 2021	6:00 AM	W	1.3
	23 Dec 2021	7:00 AM	NW	1.3
	23 Dec 2021	8:00 AM	NW	1.3
	23 Dec 2021	9:00 AM	W	1.3
	23 Dec 2021	10:00 AM	NW	1.3
	23 Dec 2021	11:00 AM	W	0.9

Appendix C - Weather Conditions during Monitoring Period

December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
23 Dec 2021	12:00 PM	NW	1.3
23 Dec 2021	1:00 PM	NW	1.8
23 Dec 2021	2:00 PM	NW	1.3
23 Dec 2021	3:00 PM	W	1.3
23 Dec 2021	4:00 PM	W	1.3
23 Dec 2021	5:00 PM	W	1.3
23 Dec 2021	6:00 PM	NW	1.3
23 Dec 2021	7:00 PM	W	1.3
23 Dec 2021	8:00 PM	NW	1.3
23 Dec 2021	9:00 PM	W	0.9
23 Dec 2021	10:00 PM	W	0.9
23 Dec 2021	11:00 PM	W	1.3
24 Dec 2021	12:00 AM	W	1.3
24 Dec 2021	1:00 AM	W	0.9
24 Dec 2021	2:00 AM	W	0.9
24 Dec 2021	3:00 AM	W	0.9
24 Dec 2021	4:00 AM	WNW	1.3
24 Dec 2021	5:00 AM	W	0.4
24 Dec 2021	6:00 AM	W	0.4
24 Dec 2021	7:00 AM	W	0.4
24 Dec 2021	8:00 AM	WNW	0.9
24 Dec 2021	9:00 AM	NW	1.3
24 Dec 2021	10:00 AM	W	0.9
24 Dec 2021	11:00 AM	W	1.3
24 Dec 2021	12:00 PM	NW	1.8
24 Dec 2021	1:00 PM	NW	3.1
24 Dec 2021	2:00 PM	NW	4.9
24 Dec 2021	3:00 PM	NW	3.1
24 Dec 2021	4:00 PM	NW	3.1
24 Dec 2021	5:00 PM	NW	1.8
24 Dec 2021	6:00 PM	NW	1.3
24 Dec 2021	7:00 PM	NW	1.8
24 Dec 2021	8:00 PM	NE	0.9
24 Dec 2021	9:00 PM	NW	0.9
24 Dec 2021	10:00 PM	NW	1.3
24 Dec 2021	11:00 PM	NW	1.3
25 Dec 2021	1:00 AM	NW	1.3
25 Dec 2021	2:00 AM	NW	1.3
25 Dec 2021	3:00 AM	E	0.9
25 Dec 2021	4:00 AM	E	0.9
25 Dec 2021	5:00 AM	E	0.9
25 Dec 2021	6:00 AM	E	0.9
25 Dec 2021	7:00 AM	ESE	0.9
25 Dec 2021	8:00 AM	ESE	1.8
25 Dec 2021	9:00 AM	ENE	1.3

Appendix C - Weather Conditions during Monitoring Period

December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
25 Dec 2021	10:00 AM	ENE	1.3
25 Dec 2021	11:00 AM	NW	1.3
25 Dec 2021	12:00 PM	NW	1.3
25 Dec 2021	1:00 PM	NW	1.3
25 Dec 2021	2:00 PM	NW	1.8
25 Dec 2021	3:00 PM	ESE	0.9
25 Dec 2021	4:00 PM	NW	1.3
25 Dec 2021	5:00 PM	NNW	1.3
25 Dec 2021	6:00 PM	ENE	1.3
25 Dec 2021	7:00 PM	ESE	1.3
25 Dec 2021	8:00 PM	E	1.8
25 Dec 2021	9:00 PM	ESE	1.8
25 Dec 2021	10:00 PM	SE	2.7
25 Dec 2021	11:00 PM	E	2.2
26 Dec 2021	12:00 AM	E	2.2
26 Dec 2021	1:00 AM	E	1.8
26 Dec 2021	2:00 AM	E	1.3
26 Dec 2021	3:00 AM	E	1.3
26 Dec 2021	4:00 AM	NW	0.9
26 Dec 2021	5:00 AM	WNW	0.4
26 Dec 2021	6:00 AM	WNW	0.9
26 Dec 2021	7:00 AM	W	0.9
26 Dec 2021	8:00 AM	W	0.9
26 Dec 2021	9:00 AM	WNW	0.9
26 Dec 2021	10:00 AM	ESE	0.4
26 Dec 2021	11:00 AM	WNW	0.4
26 Dec 2021	12:00 PM	W	0.9
26 Dec 2021	1:00 PM	W	0.9
26 Dec 2021	2:00 PM	W	0.9
26 Dec 2021	3:00 PM	W	1.3
26 Dec 2021	4:00 PM	W	0.9
26 Dec 2021	5:00 PM	W	0.4
26 Dec 2021	6:00 PM	ESE	0.4
26 Dec 2021	7:00 PM	ENE	0.4
26 Dec 2021	8:00 PM	W	0.9
26 Dec 2021	9:00 PM	W	1.3
26 Dec 2021	10:00 PM	W	1.3
26 Dec 2021	11:00 PM	W	1.3
27 Dec 2021	12:00 AM	NW	0.9
27 Dec 2021	1:00 AM	E	1.3
27 Dec 2021	2:00 AM	NW	1.3
27 Dec 2021	3:00 AM	NW	4.9
27 Dec 2021	4:00 AM	NW	3.1
27 Dec 2021	5:00 AM	NW	3.1
27 Dec 2021	6:00 AM	NW	1.3

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December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
27 Dec 2021	7:00 AM	W	0.4
27 Dec 2021	8:00 AM	NW	1.3
27 Dec 2021	9:00 AM	NW	0.9
27 Dec 2021	10:00 AM	WNW	0.9
27 Dec 2021	11:00 AM	W	0.4
27 Dec 2021	12:00 PM	W	0.9
27 Dec 2021	1:00 PM	W	0.4
27 Dec 2021	2:00 PM	WNW	0.4
27 Dec 2021	3:00 PM	W	0.4
27 Dec 2021	4:00 PM	WNW	0.4
27 Dec 2021	5:00 PM	WNW	0.4
27 Dec 2021	6:00 PM	WNW	0.4
27 Dec 2021	7:00 PM	WNW	0.4
27 Dec 2021	8:00 PM	WNW	0.4
27 Dec 2021	9:00 PM	WNW	0.4
27 Dec 2021	10:00 PM	NW	0.4
27 Dec 2021	11:00 PM	WNW	0.9
28 Dec 2021	12:00 AM	WNW	0.9
28 Dec 2021	1:00 AM	NW	0.4
28 Dec 2021	2:00 AM	NW	0.9
28 Dec 2021	3:00 AM	NW	0.9
28 Dec 2021	4:00 AM	NW	0.4
28 Dec 2021	5:00 AM	NW	0.4
28 Dec 2021	6:00 AM	NW	1.3
28 Dec 2021	7:00 AM	WNW	1.3
28 Dec 2021	8:00 AM	NE	1.3
28 Dec 2021	9:00 AM	NE	0.9
28 Dec 2021	10:00 AM	NW	0.9
28 Dec 2021	11:00 AM	NW	0.9
28 Dec 2021	12:00 PM	NW	0.9
28 Dec 2021	1:00 PM	NW	0.9
28 Dec 2021	2:00 PM	NW	1.8
28 Dec 2021	3:00 PM	NE	1.3
28 Dec 2021	4:00 PM	NE	1.3
28 Dec 2021	5:00 PM	NW	0.4
28 Dec 2021	6:00 PM	WNW	0.0
28 Dec 2021	7:00 PM	W	0.4
28 Dec 2021	8:00 PM	W	0.0
28 Dec 2021	9:00 PM	W	0.0
28 Dec 2021	10:00 PM	WNW	0.4
28 Dec 2021	11:00 PM	W	0.4
29 Dec 2021	12:00 AM	WNW	1.3
29 Dec 2021	1:00 AM	WNW	1.3
29 Dec 2021	2:00 AM	WNW	0.9
29 Dec 2021	3:00 AM	WNW	0.9

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December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
29 Dec 2021	4:00 AM	WNW	0.9
29 Dec 2021	5:00 AM	WNW	1.3
29 Dec 2021	6:00 AM	NW	1.3
29 Dec 2021	7:00 AM	WNW	0.4
29 Dec 2021	8:00 AM	WNW	1.3
29 Dec 2021	9:00 AM	W	0.9
29 Dec 2021	10:00 AM	W	1.8
29 Dec 2021	11:00 AM	W	1.3
29 Dec 2021	12:00 PM	W	0.9
29 Dec 2021	1:00 PM	W	0.9
29 Dec 2021	2:00 PM	NW	0.4
29 Dec 2021	3:00 PM	NW	0.9
29 Dec 2021	4:00 PM	NW	1.3
29 Dec 2021	5:00 PM	NW	1.3
29 Dec 2021	6:00 PM	NW	1.3
29 Dec 2021	7:00 PM	NW	0.9
29 Dec 2021	8:00 PM	---	0.0
29 Dec 2021	9:00 PM	---	0.0
29 Dec 2021	10:00 PM	NNW	0.0
29 Dec 2021	11:00 PM	NNW	0.0
30 Dec 2021	12:00 AM	NW	0.4
30 Dec 2021	1:00 AM	NW	1.3
30 Dec 2021	2:00 AM	NW	2.2
30 Dec 2021	3:00 AM	NW	4.0
30 Dec 2021	4:00 AM	NW	4.9
30 Dec 2021	5:00 AM	NW	4.0
30 Dec 2021	6:00 AM	NW	3.1
30 Dec 2021	7:00 AM	NW	1.3
30 Dec 2021	8:00 AM	NW	1.3
30 Dec 2021	9:00 AM	NW	1.3
30 Dec 2021	10:00 AM	NW	0.9
30 Dec 2021	11:00 AM	NW	0.9
30 Dec 2021	12:00 PM	NW	0.9
30 Dec 2021	1:00 PM	NW	0.9
30 Dec 2021	2:00 PM	NW	0.9
30 Dec 2021	3:00 PM	NW	1.8
30 Dec 2021	4:00 PM	WNW	1.3
30 Dec 2021	5:00 PM	W	1.3
30 Dec 2021	6:00 PM	W	0.9
30 Dec 2021	7:00 PM	W	0.9
30 Dec 2021	8:00 PM	WNW	0.9
30 Dec 2021	9:00 PM	W	1.3
30 Dec 2021	10:00 PM	WNW	1.8
30 Dec 2021	11:00 PM	WNW	1.8
31 Dec 2021	12:00 AM	WNW	0.9

Appendix C - Weather Conditions during Monitoring Period

December 2021			
Table II: Wind Speed and Directions			
November 2021	Time	Direction	Wind Speed m-s
31 Dec 2021	1:00 AM	WNW	1.3
31 Dec 2021	2:00 AM	WNW	2.2
31 Dec 2021	3:00 AM	WNW	1.3
31 Dec 2021	4:00 AM	NW	1.8
31 Dec 2021	5:00 AM	WNW	1.3
31 Dec 2021	6:00 AM	WNW	1.3
31 Dec 2021	7:00 AM	WNW	1.3
31 Dec 2021	8:00 AM	WNW	1.3
31 Dec 2021	9:00 AM	WNW	1.3
31 Dec 2021	10:00 AM	N	0.9
31 Dec 2021	11:00 AM	N	0.9
31 Dec 2021	12:00 PM	WNW	0.9
31 Dec 2021	1:00 PM	WNW	0.9
31 Dec 2021	2:00 PM	WNW	0.9
31 Dec 2021	3:00 PM	WNW	1.8
31 Dec 2021	4:00 PM	WNW	1.3
31 Dec 2021	5:00 PM	WNW	1.3
31 Dec 2021	6:00 PM	WNW	0.9
31 Dec 2021	7:00 PM	WNW	1.3
31 Dec 2021	8:00 PM	WNW	1.3
31 Dec 2021	9:00 PM	WNW	1.3
31 Dec 2021	10:00 PM	NNE	0.9
31 Dec 2021	11:00 PM	E	0.9

**APPENDIX D
ENVIRONMENTAL MONITORING
SCHEDULES**

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Impact Air Quality And Noise Monitoring Schedule (December 2021)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Dec	2-Dec	3-Dec	4-Dec
				24 hrs TSP	1 hr TSP X3 [AM5A, 6A] [AM1, AM2, AM3, AM4] Noise [Evening time (19:00-23:00)] [CM1, CM2, CM3] Noise [Night-time (23:00-07:00)] [CM1, CM2, CM3]	
5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	10-Dec	11-Dec
			24 hrs TSP	1 hr TSP X3 [AM5A, 6A] [AM1, AM2, AM3, AM4] Noise [Daytime (07:00-19:00)] [CM6(A), CM7(A), CM9(A)] [CM1, CM2, CM3, CM4, CM6] Noise [Evening time (19:00-23:00)] [CM6(A)]	Noise [Evening time (19:00-23:00)] [CM1, CM2, CM3] Noise [Night-time (23:00-07:00)] [CM1, CM2, CM3]	
12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec	18-Dec
		24 hrs TSP	1 hr TSP X3 [AM5A, 6A] [AM1, AM2, AM3, AM4] Noise [Daytime (07:00-19:00)] [CM6(A), CM7(A), CM9(A)] [CM1, CM2, CM3, CM4, CM6] Noise [Evening time (19:00-23:00)] [CM6(A)]		Noise [Evening time (19:00-23:00)] [CM1, CM2, CM3] Noise [Night-time (23:00-07:00)] [CM1, CM2, CM3]	
19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec	25-Dec
	24 hrs TSP	1 hr TSP X3 [AM5A, 6A] [AM1, AM2, AM3, AM4] Noise [Daytime (07:00-19:00)] [CM6(A), CM7(A), CM9(A)] [CM1, CM2, CM3, CM4, CM6] Noise [Evening time (19:00-23:00)] [CM6(A)]			Noise [Evening time (19:00-23:00)] [CM1, CM2, CM3] Noise [Night-time (23:00-07:00)] [CM1, CM2, CM3]	
26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	
				1 hr TSP X3 [AM5A, 6A] [AM1, AM2, AM3, AM4] Noise [Daytime (07:00-19:00)] [CM6(A), CM7(A), CM9(A)] [CM1, CM2, CM3, CM4, CM6] Noise [Evening time (19:00-23:00)] [CM6(A)]	Noise [Evening time (19:00-23:00)] [CM1, CM2, CM3] Noise [Night-time (23:00-07:00)] [CM1, CM2, CM3]	

Air Quality Monitoring Station

AM1 - Tin Hau Temple
 AM2 - Sai Tso Wan Recreation Ground
 AM3 - Yau Lai Estate Bik Lai House
 AM4⁽¹⁾ - Sitting-out Area at Cha Kwo Ling Village
 AM4(A)⁽²⁾ - Cha Kwo Ling Public Cargo Working Area Administrative Office
 AM5(A) - Tseung Kwan O DSD Desilting Compound
 AM6(A) - Park Central, L1/F Open Space Area

Noise Monitoring Station

CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong
 CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong
 CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong
 CM4 - Tin Hau Temple, Cha Kwo Ling
 CM5 - CCC Kei Faat Primary School, Yau Tong
 CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores
 CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores
 CM8(A) - Park Central, L1/F Open Space Area

Note (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

Agreement No. CE/59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
Impact Water Quality Monitoring Schedule (December 2021)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Dec	2-Dec	3-Dec	4-Dec
			Mid-Ebb 9:06 Mid-Flood 14:38		Mid-Ebb 10:40 Mid-Flood 15:34	
5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	10-Dec	11-Dec
	Mid-Ebb 7:45 Mid-Flood 13:08		Mid-Ebb 9:42 Mid-Flood 14:46		Mid-Flood 7:13	
12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec	18-Dec
	Mid-Ebb 8:00 Mid-Flood 14:14		Mid-Ebb 9:02 Mid-Flood 15:10		Mid-Flood 10:17 Mid-Ebb 16:14	
19-Dec	20-Dec	21-Dec	22-Dec	23-Dec	24-Dec	25-Dec
	Mid-Flood 7:30 Mid-Ebb 11:52		Mid-Flood 8:32 Mid-Ebb 13:44		Mid-Flood 10:17 Mid-Ebb 14:10	
26-Dec	27-Dec	28-Dec	29-Dec	30-Dec	31-Dec	
			Mid-Flood 7:59 Mid-Ebb 13:37		Mid-Ebb 9:45 Mid-Flood 14:45	

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Monitoring Station:

C1, C2, G1, G2, G3, G4, M1, M2, M3, M4, M5, M6

**APPENDIX E
1-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS**

APPENDIX E - 1-HOUR TSP MONITORING RESULTS

Location AM1 - Tin Hau Temple			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
3-Dec-21	12:20	Sunny	20.0
3-Dec-21	13:15	Sunny	24.0
3-Dec-21	14:15	Sunny	28.0
9-Dec-21	12:30	Sunny	70.0
9-Dec-21	13:30	Sunny	76.0
9-Dec-21	14:30	Sunny	50.0
15-Dec-21	12:30	Fine	76.0
15-Dec-21	13:30	Fine	80.0
15-Dec-21	14:30	Fine	84.0
21-Dec-21	12:30	Rainly	58.0
21-Dec-21	13:30	Rainly	48.0
21-Dec-21	14:30	Rainly	66.0
24-Dec-21	13:00	Cloudy	98.0
24-Dec-21	14:00	Cloudy	110.0
24-Dec-21	15:00	Cloudy	104.0
30-Dec-21	13:00	Sunny	40.0
30-Dec-21	14:00	Sunny	44.0
30-Dec-21	15:00	Sunny	38.0
Average			61.9
Maximum			110.0
Minimum			20.0

Location AM2 - Sai Tso Wan Recreation Ground			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
3-Dec-21	9:00	Sunny	28.0
3-Dec-21	10:00	Sunny	26.0
3-Dec-21	11:00	Sunny	24.0
9-Dec-21	9:00	Sunny	38.0
9-Dec-21	10:00	Sunny	36.0
9-Dec-21	11:00	Sunny	36.0
15-Dec-21	9:00	Fine	54.0
15-Dec-21	10:00	Fine	50.0
15-Dec-21	11:00	Fine	50.0
21-Dec-21	9:00	Rainly	50.0
21-Dec-21	10:00	Rainly	42.0
21-Dec-21	11:00	Rainly	58.0
24-Dec-21	9:00	Fine	28.5
24-Dec-21	10:00	Fine	32.3
24-Dec-21	11:00	Fine	32.3
30-Dec-21	15:00	Fine	34.0
30-Dec-21	16:00	Fine	34.0
30-Dec-21	17:00	Fine	24.0
Average			37.6
Maximum			58.0
Minimum			24.0

APPENDIX E - 1-HOUR TSP MONITORING RESULTS

Location AM3 - Yau Lai Estate Bik Lai House			
Date	Time	Weather	<i>Particulate Concentration ($\mu\text{g}/\text{m}^3$)</i>
3-Dec-21	15:20	Sunny	20.0
3-Dec-21	16:20	Sunny	22.0
3-Dec-21	17:20	Sunny	20.0
9-Dec-21	9:00	Sunny	28.0
9-Dec-21	10:00	Sunny	28.0
9-Dec-21	11:00	Sunny	20.0
15-Dec-21	9:00	Fine	26.0
15-Dec-21	10:00	Fine	30.0
15-Dec-21	11:00	Fine	30.0
21-Dec-21	15:30	Rainly	26.0
21-Dec-21	16:30	Rainly	22.0
21-Dec-21	17:30	Rainly	26.0
24-Dec-21	9:00	Cloudy	120.0
24-Dec-21	10:00	Cloudy	126.0
24-Dec-21	11:00	Cloudy	116.0
30-Dec-21	9:00	Sunny	30.0
30-Dec-21	10:00	Sunny	34.0
30-Dec-21	11:00	Sunny	36.0
Average			42.2
Maximum			126.0
Minimum			20.0

Location AM4 - Sitting-out Area at Cha Kwo Ling Village			
Date	Time	Weather	<i>Particulate Concentration ($\mu\text{g}/\text{m}^3$)</i>
3-Dec-21	9:10	Sunny	24.0
3-Dec-21	10:10	Sunny	28.0
3-Dec-21	11:10	Sunny	22.0
9-Dec-21	15:00	Sunny	52.0
9-Dec-21	16:00	Sunny	42.0
9-Dec-21	17:00	Sunny	56.0
15-Dec-21	15:00	Fine	56.0
15-Dec-21	16:00	Fine	48.0
15-Dec-21	17:00	Fine	50.0
21-Dec-21	9:30	Rainly	28.0
21-Dec-21	10:30	Rainly	24.0
21-Dec-21	11:30	Rainly	34.0
24-Dec-21	16:00	Cloudy	98.0
24-Dec-21	17:00	Cloudy	110.0
24-Dec-21	18:00	Cloudy	104.0
30-Dec-21	16:00	Sunny	42.0
30-Dec-21	17:00	Sunny	46.0
30-Dec-21	18:00	Sunny	48.0
Average			50.7
Maximum			110.0
Minimum			22.0

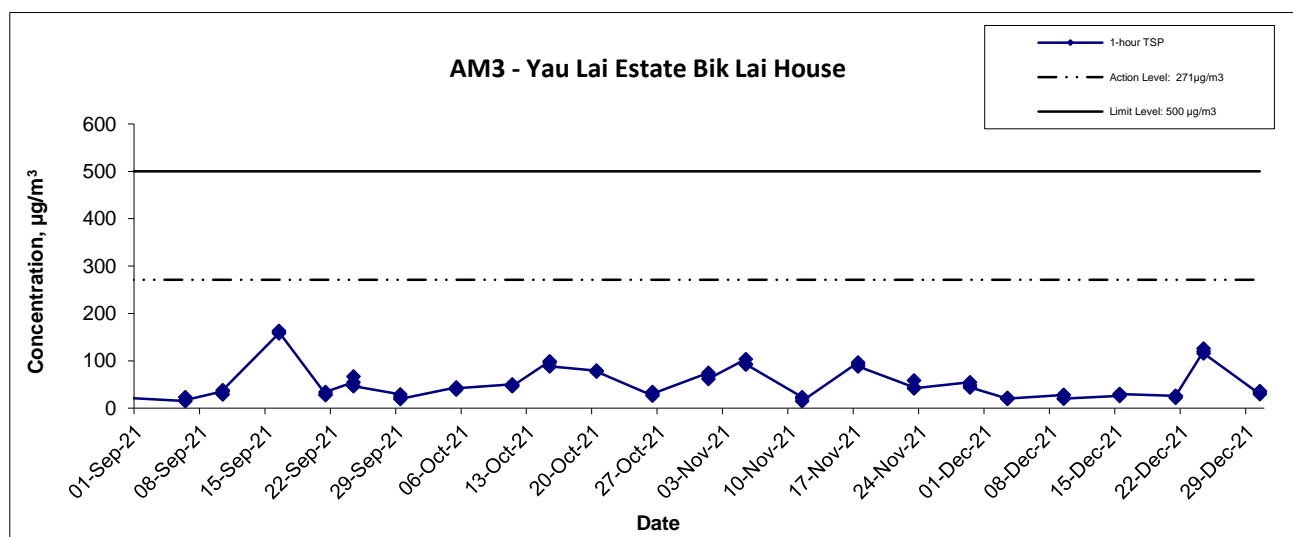
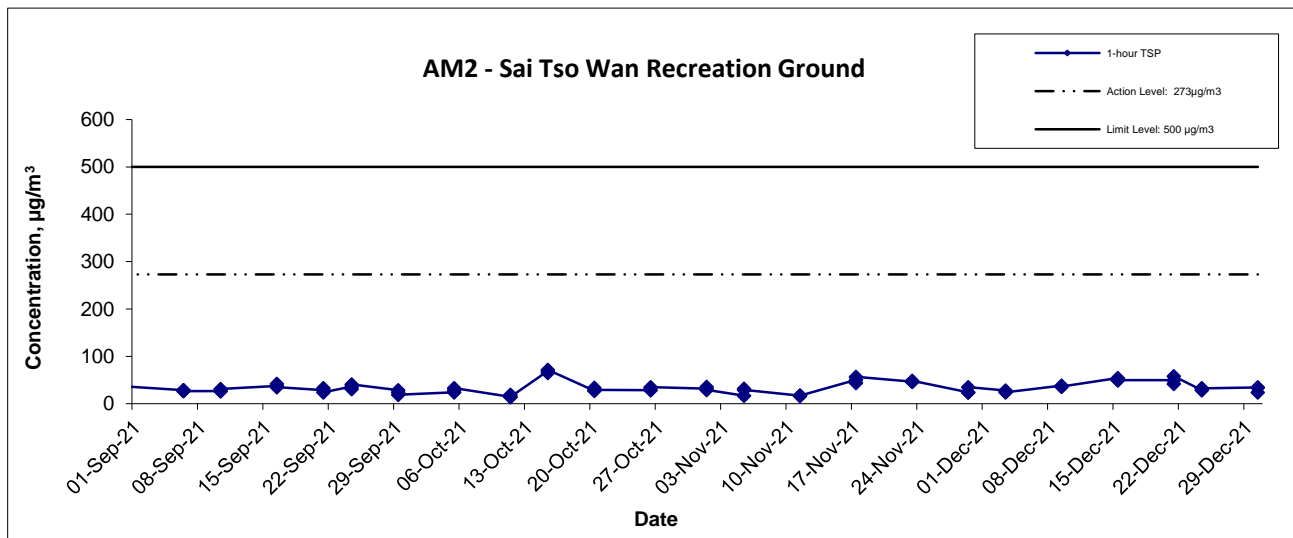
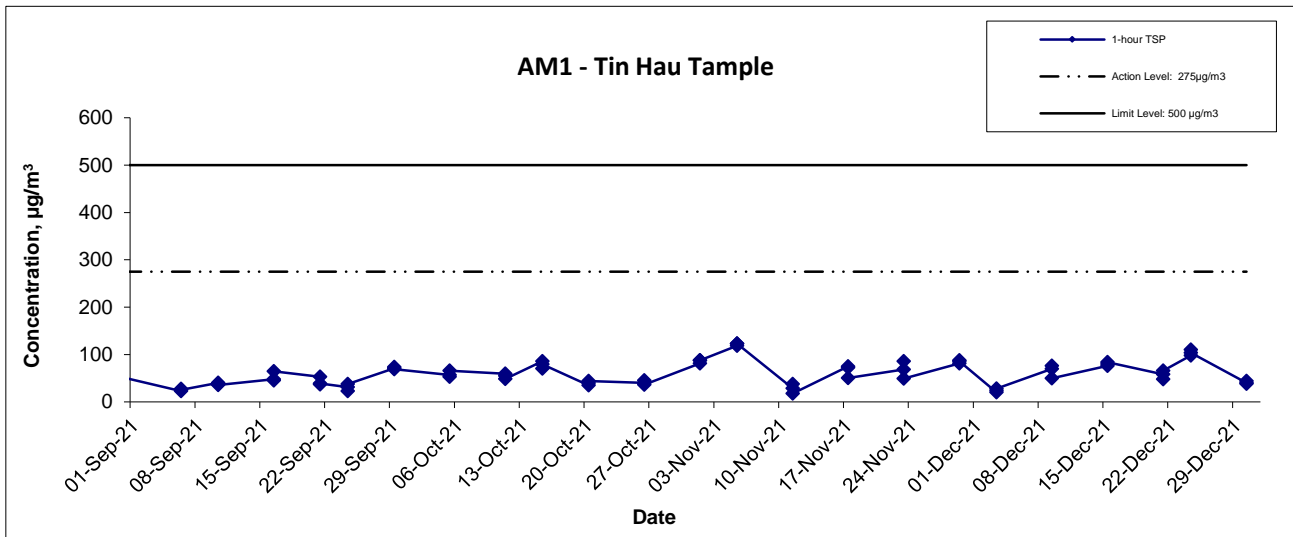
APPENDIX E - 1-HOUR TSP MONITORING RESULTS

Location AM5(A) - Tseung Kwan O DSD Desilting Compound			
Date	Time	Weather	<i>Particulate Concentration ($\mu\text{g}/\text{m}^3$)</i>
3-Dec-21	13:00	Sunny	25.2
3-Dec-21	14:00	Sunny	23.1
3-Dec-21	15:00	Sunny	23.1
9-Dec-21	13:00	Sunny	46.2
9-Dec-21	14:00	Sunny	42.0
9-Dec-21	15:00	Sunny	37.8
15-Dec-21	16:00	Fine	44.0
15-Dec-21	17:00	Fine	42.0
15-Dec-21	18:00	Fine	40.0
21-Dec-21	16:00	Rainly	42.0
21-Dec-21	17:00	Rainly	46.0
21-Dec-21	18:00	Rainly	50.0
24-Dec-21	16:00	Fine	34.2
24-Dec-21	17:00	Fine	41.8
24-Dec-21	18:00	Fine	38.0
30-Dec-21	9:30	Fine	52.0
30-Dec-21	10:30	Fine	56.0
30-Dec-21	11:30	Fine	48.0
Average			40.6
Maximum			56.0
Minimum			23.1

Location AM6(A) - Park Central, L1/F Open Space Area			
Date	Time	Weather	<i>Particulate Concentration ($\mu\text{g}/\text{m}^3$)</i>
3-Dec-21	13:00	Sunny	28.0
3-Dec-21	14:00	Sunny	22.0
3-Dec-21	15:00	Sunny	20.0
9-Dec-21	13:00	Sunny	40.0
9-Dec-21	14:00	Sunny	38.0
9-Dec-21	15:00	Sunny	32.0
15-Dec-21	13:00	Fine	52.0
15-Dec-21	14:00	Fine	54.0
15-Dec-21	15:00	Fine	62.0
21-Dec-21	13:00	Rainly	50.0
21-Dec-21	14:00	Rainly	56.0
21-Dec-21	15:00	Rainly	62.0
24-Dec-21	13:00	Fine	30.4
24-Dec-21	14:00	Fine	32.3
24-Dec-21	15:00	Fine	41.8
30-Dec-21	13:00	Fine	38.0
30-Dec-21	14:00	Fine	52.0
30-Dec-21	15:00	Fine	46.0
Average			42.0
Maximum			62.0
Minimum			20.0

APPENDIX E - 1-HOUR TSP MONITORING RESULTS

1-hr TSP Concentration Levels



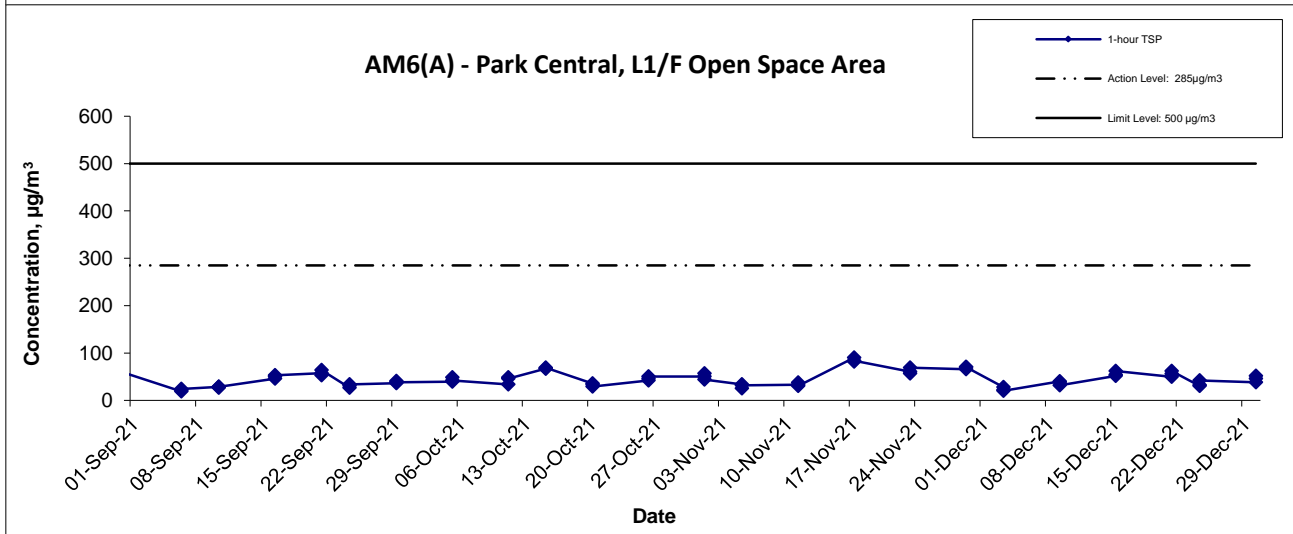
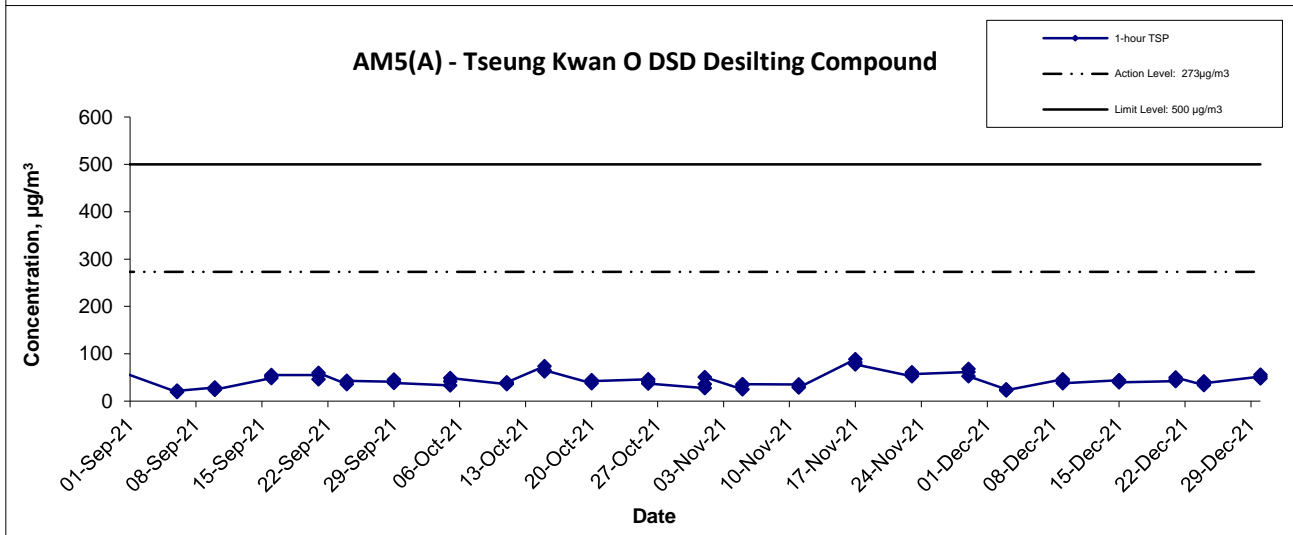
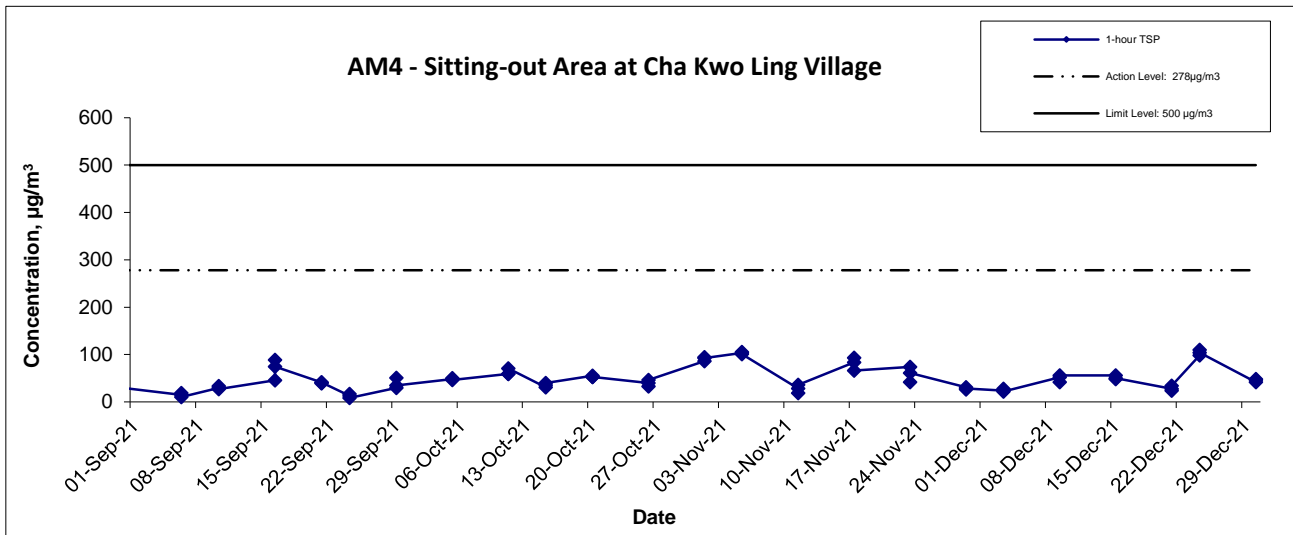
Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel -
 Design and Construction
 Graphical Presentation of 1-hour TSP Monitoring Results

Scale	N.T.S	Project No.	MA16034
Date	Dec-21	Appendix	E



APPENDIX E - 1-HOUR TSP MONITORING RESULTS

1-hr TSP Concentration Levels



Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel -
 Design and Construction
 Graphical Presentation of 1-hour TSP Monitoring Results

Scale
 N.T.S
 Date
 Dec-21

Project
 No. MA16034
 Appendix
 E



**APPENDIX F
24-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS**

Appendix F - 24-hour TSP Monitoring Results

Location AM1 - Tin Hau Temple

Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m ³ /min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(μg/m ³)
2-Dec-21	Sunny	3.6275	3.8393	0.2118	9272.6	9296.6	24.0	1.25	1.24	1.24	1792.1	118.2
8-Dec-21	Sunny	3.7077	3.9515	0.2438	9296.6	9320.7	24.0	1.24	1.24	1.24	1787.8	136.4
14-Dec-21	Fine	3.3652	3.6023	0.2371	9320.3	9344.3	24.0	1.22	1.21	1.22	1749.5	135.5
20-Dec-21	Rainy	3.7324	3.8088	0.0764	9337.2	9361.2	24.0	1.22	1.22	1.22	1759.5	43.4
23-Dec-21	Cloudy	3.6847	3.8948	0.2101	9361.0	9385.0	24.0	1.22	1.22	1.22	1753.1	119.8
29-Dec-21	Sunny	3.4074	3.5636	0.1562	9385.0	9409.0	24.0	1.22	1.23	1.22	1763.5	88.6
											Min	43.4
											Max	136.4
											Average	107.0

Location AM2 - Sai Tso Wan Recreation Ground

Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m ³ /min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(μg/m ³)
2-Dec-21	Sunny	3.7034	3.7742	0.0708	30331.1	30355.1	24.0	1.25	1.24	1.25	1793.8	39.5
8-Dec-21	Sunny	3.4224	3.4990	0.0766	30355.1	30379.1	24.0	1.24	1.24	1.24	1787.0	42.9
14-Dec-21	Fine	3.4018	3.4667	0.0649	30379.1	30403.1	24.0	1.22	1.21	1.21	1749.5	37.1
20-Dec-21	Rainy	3.3826	3.4123	0.0297	30403.1	30427.1	24.0	1.22	1.22	1.22	1758.8	16.9
23-Dec-21	Fine	3.4092	3.4613	0.0521	30427.1	30451.1	24.0	1.22	1.22	1.22	1752.4	29.7
29-Dec-21	Sunny	3.3658	3.4840	0.1182	30451.1	30475.2	24.0	1.22	1.22	1.22	1763.6	67.0
											Min	16.9
											Max	67.0
											Average	38.8

Location AM3 - Yau Lai Estate, Bik Lai House

Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m ³ /min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(μg/m ³)
2-Dec-21	Sunny	3.7176	3.8282	0.1106	4793.4	4817.4	24.0	1.25	1.25	1.25	1794.1	61.6
8-Dec-21	Sunny	3.7086	3.8665	0.1579	4817.4	4841.4	24.0	1.24	1.24	1.24	1788.0	88.3
14-Dec-21	Sunny	3.3968	3.5848	0.1880	4841.4	4865.4	24.0	1.21	1.21	1.21	1746.7	107.6
20-Dec-21	Rainy	3.699	3.7570	0.0580	4865.4	4889.4	24.0	1.22	1.22	1.22	1756.2	33.0
23-Dec-21	Cloudy	3.6743	3.8024	0.1281	4889.4	4913.4	24.0	1.21	1.22	1.21	1749.6	73.2
29-Dec-21	Sunny	3.3858	3.6384	0.2526	4913.4	4937.4	24.0	1.22	1.22	1.22	1760.3	143.5
											Min	33.0
											Max	143.5
											Average	84.6

Location AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office

Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m ³ /min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(μg/m ³)
2-Dec-21	Sunny	3.6421	3.7915	0.1494	14785.8	14809.8	24.0	1.24	1.24	1.24	1790.5	83.4
8-Dec-21	Sunny	3.7004	3.8512	0.1508	14809.8	14833.8	24.0	1.24	1.24	1.24	1786.4	84.4
14-Dec-21	Fine	3.3618	3.5946	0.2328	14833.83	14857.8	24.0	1.22	1.21	1.21	1747.8	133.2
20-Dec-21	Rainy	3.6624	3.7344	0.0720	14857.83	14881.8	24.0	1.22	1.22	1.22	1756.8	41.0
23-Dec-21	Cloudy	3.6854	3.8475	0.1621	14881.83	14905.8	24.0	1.22	1.22	1.22	1750.6	92.6
29-Dec-21	Sunny	3.3700	3.7141	0.3441	14905.83	14929.8	24.0	1.22	1.22	1.22	1760.7	195.4
											Min	41.0
											Max	195.4
											Average	105.0

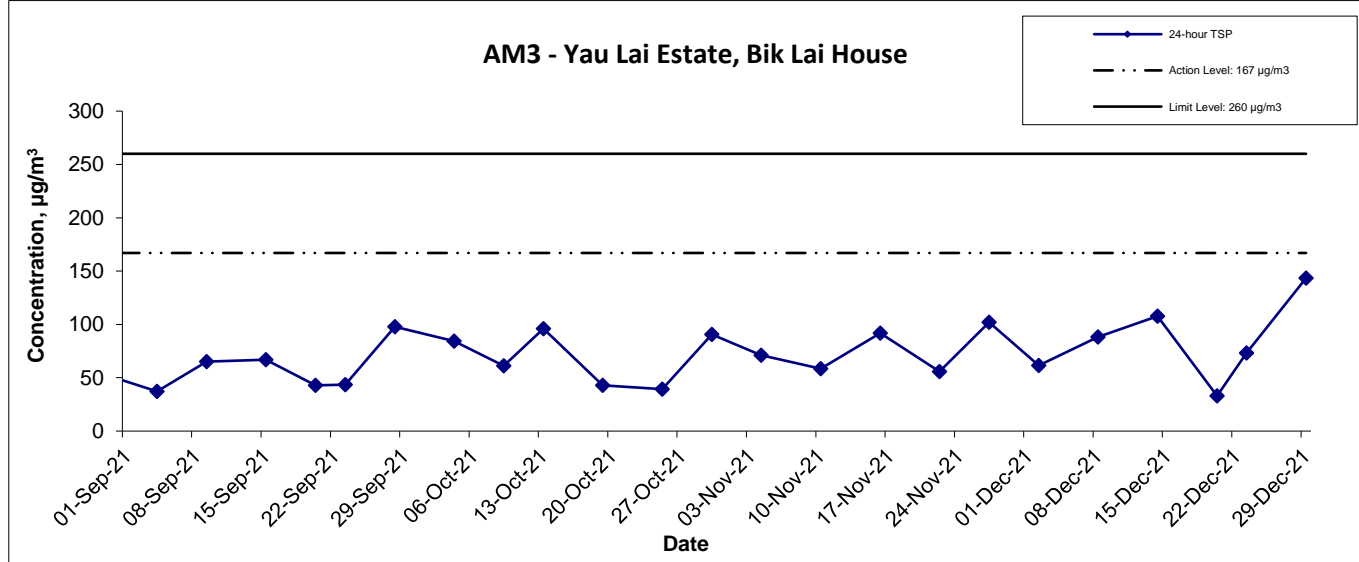
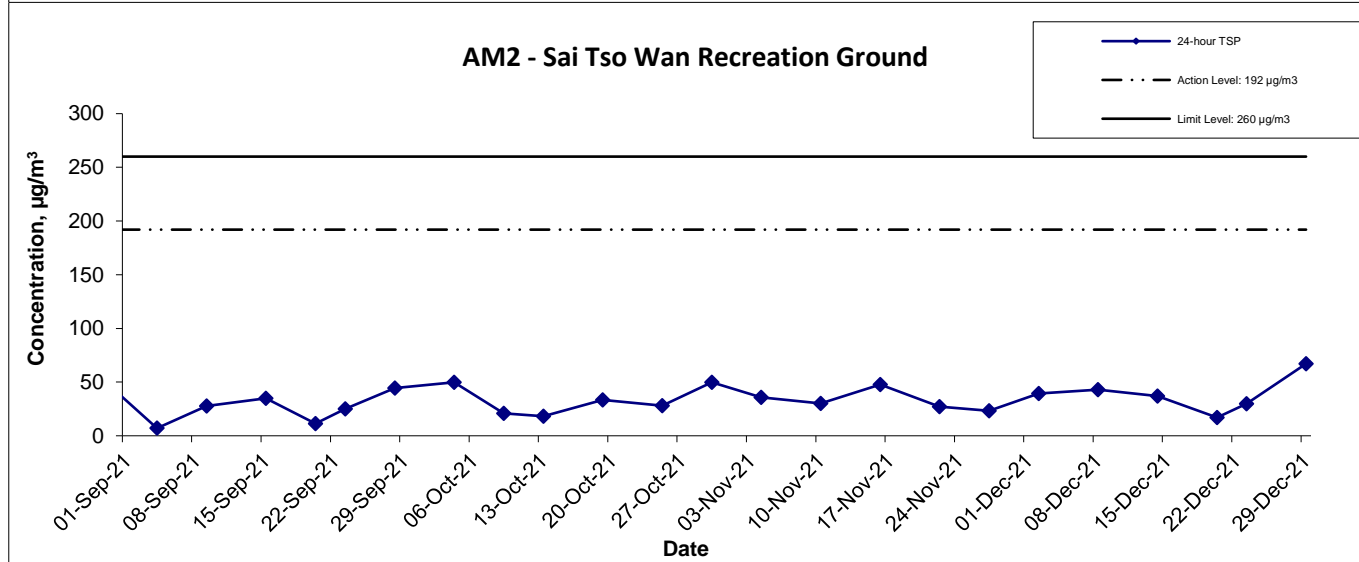
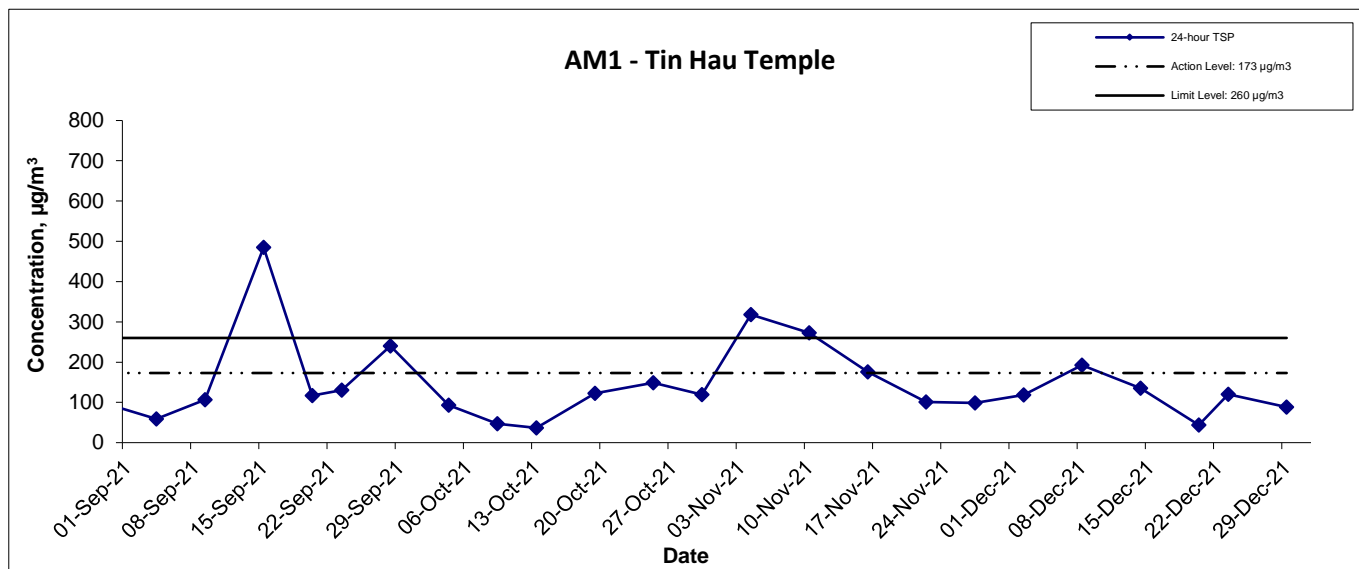
Location AM5(A) - Tseung Kwan O DSD Desilting Compound


Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m ³ /min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(μg/m ³)
2-Dec-21	Sunny	3.6898	3.8470	0.1572	32058.63	32082.6	24.0	1.25	1.24	1.24	1792.6	87.7
8-Dec-21	Sunny	3.6907	3.8313	0.1406	32082.6	32106.6	24.0	1.24	1.24	1.24	1786.1	78.7
14-Dec-21	Fine	3.4100	3.5590	0.1490	32106.6	32130.6	24.0	1.22	1.21	1.21	1748.6	85.2
20-Dec-21	Rainy	3.3844	3.4399	0.0555	32130.6	32154.6	24.0	1.22	1.22	1.22	1757.6	31.6
23-Dec-21	Fine	3.4090	3.5012	0.0922	32154.6	32178.6	24.0	1.22	1.22	1.22	1751.4	52.6
29-Dec-21	Sunny	3.3449	3.4833	0.1384	32178.6	32202.6	24.0	1.22	1.22	1.22	1761.5	78.6
											Min	31.6
											Max	87.7
											Average	69.1

Location AM6(A) - Park Central, L1/F Open Space Area

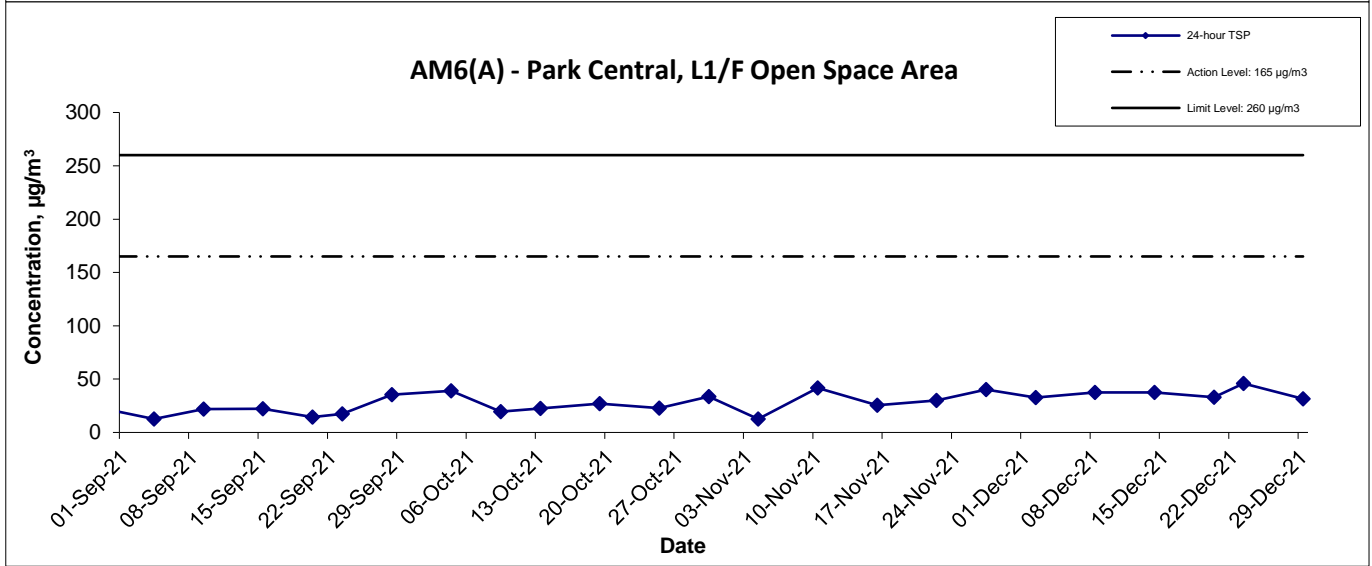
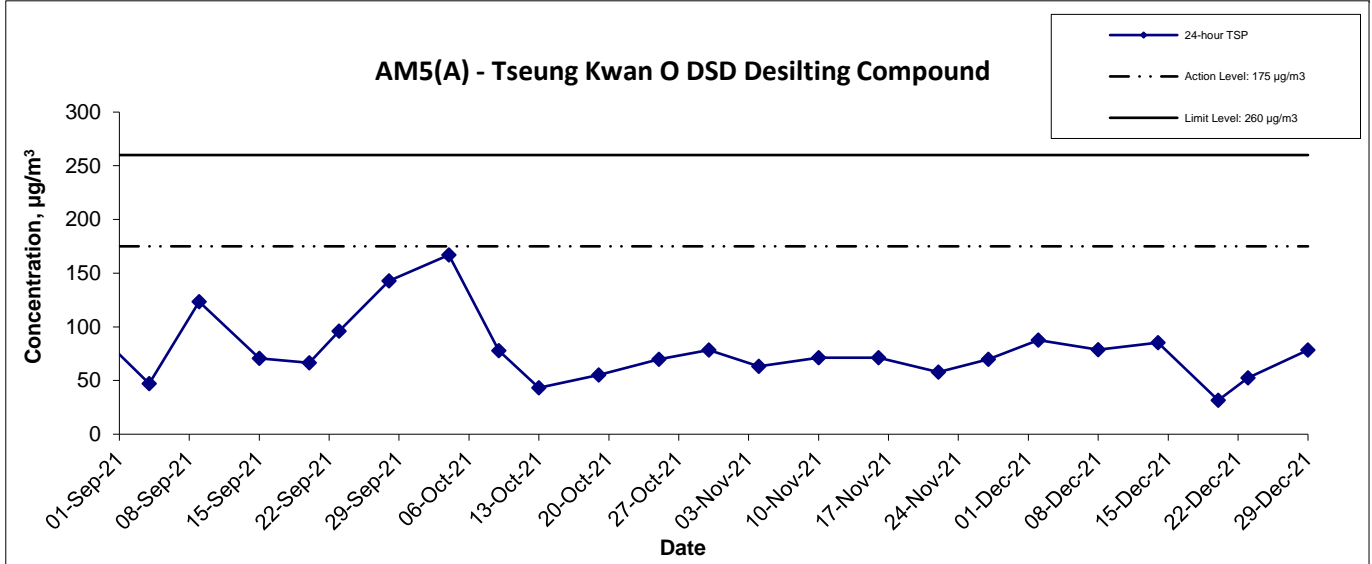
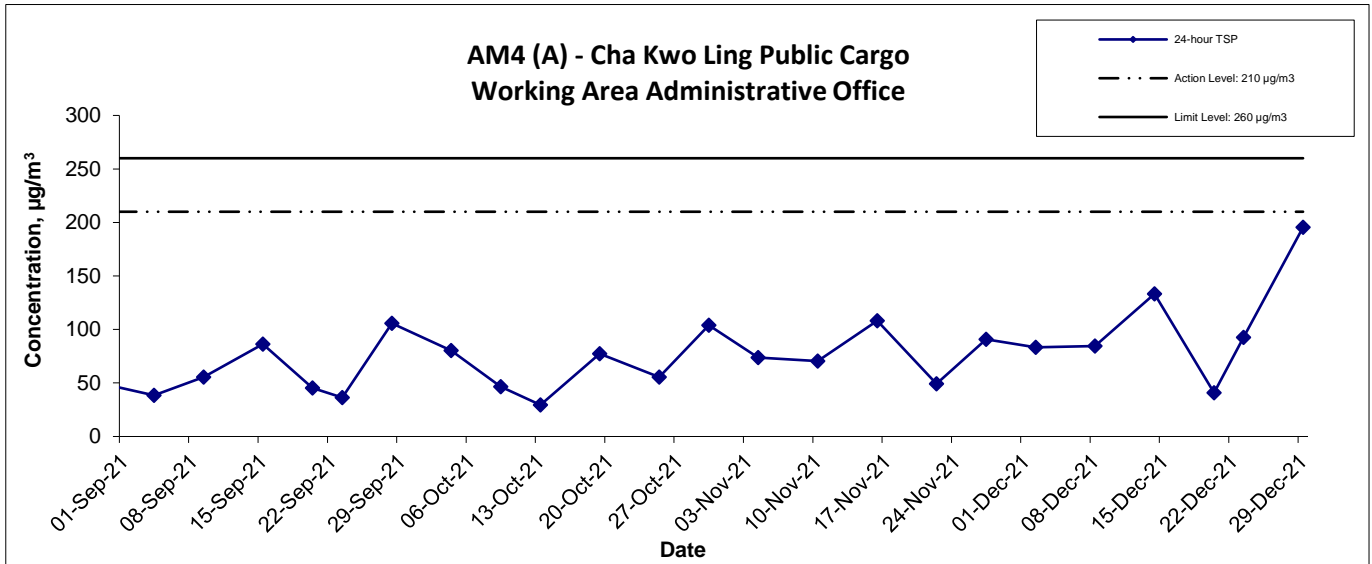
Start Date	Weather	Filter Weight (g)		Particulate	Elapse Time		Sampling	Flow Rate (m ³ /min.)		Av. flow	Total vol.	Conc.
	Condition	Initial	Final	Weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(μg/m ³)
2-Dec-21	Sunny	3.7155	3.7740	0.0585	3948.8	3972.8	24.0	1.24	1.24	1.24	1782.6	32.8
8-Dec-21	Sunny	3.7085	3.7752	0.0667	3972.8	3996.8	24.0	1.23	1.23	1.23	1775.7	37.6
14-Dec-21	Fine	3.4115	3.4780	0.0665	3996.8	4020.8	24.0	1.23	1.23	1.23	1775.7	37.5
20-Dec-21	Rainy	3.3962	3.4546	0.0584	4020.8	4044.8	24.0	1.23	1.23	1.23	1768.8	33.0
23-Dec-21	Fine	3.4118	3.4937	0.0819	4044.8	4068.8	24.0	1.24	1.23	1.24	1778.6	46.0
29-Dec-21	Sunny	3.3565	3.4125	0.0560	4068.8	4092.8	24.0	1.23	1.23	1.23	1771.8	31.6
											Min	31.6
											Max	46.0
											Average	36.4


24-hr TSP Concentration Levels



Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of 24-hour TSP Monitoring Results	Scale	Project	
		N.T.S	
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24-hr TSP Concentration Levels



Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction	Scale	Project	
		N.T.S	
Graphical Presentation of 24-hour TSP Monitoring Results	Date	Appendix	
		Dec-21	F

**APPENDIX G
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Appendix G - Noise Monitoring Results

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
09-Dec-21	9:40	Sunny	62.7	65.8	60.4	65.5	63 Measured ≤ Baseline
15-Dec-21	10:15	Fine	63.2	65.8	60.7	65.5	63 Measured ≤ Baseline
21-Dec-21	15:30	Rainy	64.3	65.8	62.6	65.5	64 Measured ≤ Baseline
30-Dec-21	9:30	Sunny	70.1	72.7	67.5	65.5	68

Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
09-Dec-21	9:00	Sunny	63.7	65.8	61.6	63.6	47
15-Dec-21	9:30	Fine	64.8	66.6	61.7	63.6	59
21-Dec-21	14:30	Rainy	64.9	67.1	62.0	63.6	59
30-Dec-21	10:15	Sunny	70.3	72.9	67.2	63.6	69

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
09-Dec-21	10:30	Sunny	65.6	67.1	62.5	65.6	66 Measured ≤ Baseline
15-Dec-21	10:55	Fine	65.2	66.7	62.8	65.6	65 Measured ≤ Baseline
21-Dec-21	13:30	Rainy	63.7	65.4	60.8	65.6	64 Measured ≤ Baseline
30-Dec-21	13:00	Sunny	70.3	72.6	67.1	65.6	69

Location CM4 - Tin Hau Temple, Cha Kwo Ling							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
09-Dec-21	13:00	Sunny	68.6	70.5	64.3	62.0	68
15-Dec-21	13:00	Fine	67.1	70.6	65.8	62.0	65
21-Dec-21	10:45	Rainy	65.5	66.7	63.2	62.0	63
30-Dec-21	14:00	Sunny	64.2	66.7	62.3	62.0	60

Location CM5 - CCC Kei Faat Primary School, Yau Tong							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
09-Dec-21	11:20	Sunny	64.3	66.5	60.7	68.2	64 Measured ≤ Baseline
15-Dec-21	11:40	Fine	65.9	68.1	62.2	68.2	66 Measured ≤ Baseline
21-Dec-21	11:40	Rainy	64.7	68.6	61.9	68.2	65 Measured ≤ Baseline
30-Dec-21	11:20	Sunny	66.3	68.8	63.9	68.2	66 Measured ≤ Baseline

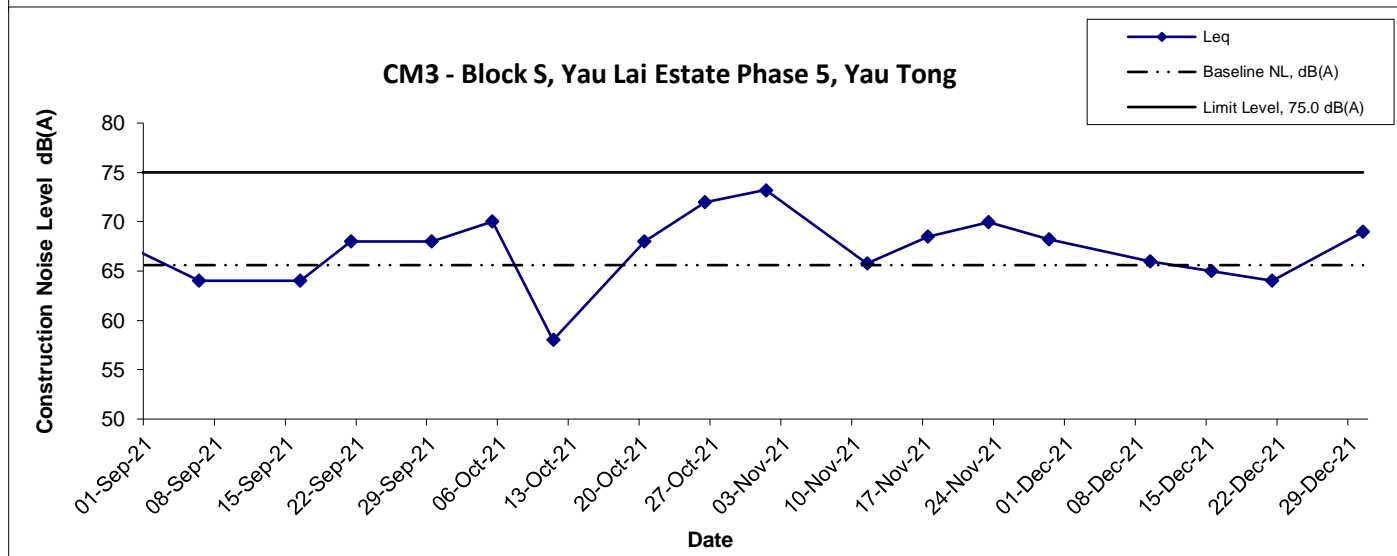
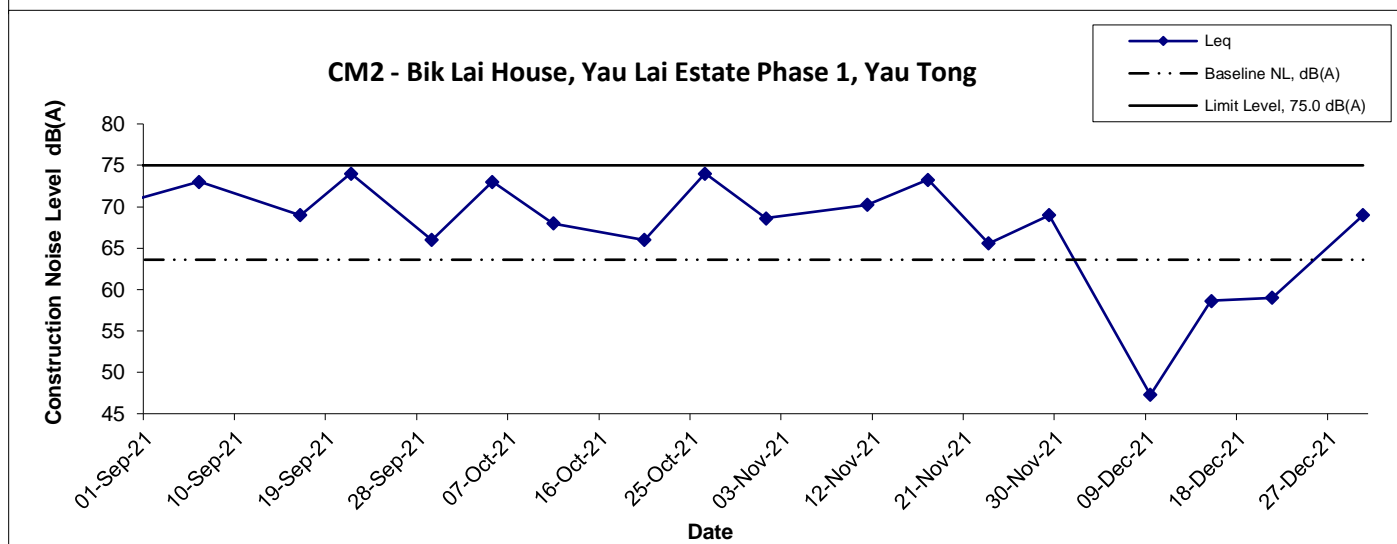
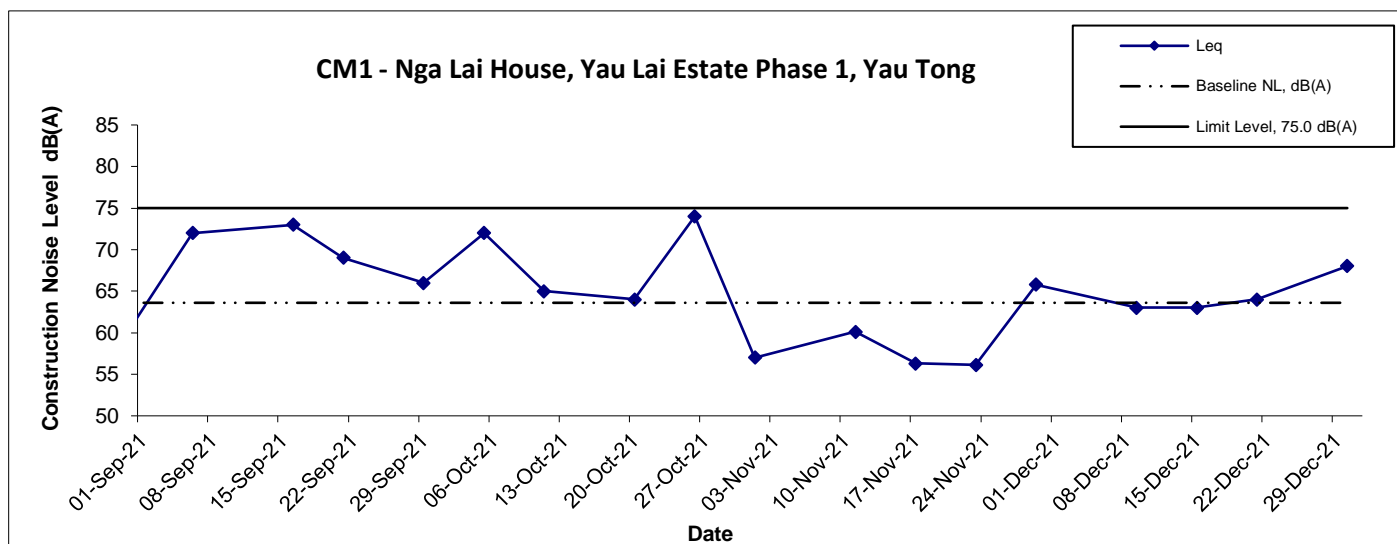
Appendix G - Noise Monitoring Results

Location CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
09-Dec-21	15:15	Sunny	64.3	66.4	59.6	61.9	61
15-Dec-21	14:30	Fine	64.1	65.7	60.8	61.9	60
21-Dec-21	16:00	Rainy	62.3	66.1	59.3	61.9	52
30-Dec-21	10:00	Fine	65.2	66.8	63.7	61.9	62

Location CM7(A) - Site Boundary of Contract No. NE/2015/02 near Tower 7, Ocean Shores							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
09-Dec-21	14:30	Sunny	65.8	67.7	62.2	58.3	65
15-Dec-21	13:50	Fine	62.5	64.7	59.9	58.3	60
21-Dec-21	16:50	Rainy	60.6	63.7	57.9	58.3	57
30-Dec-21	11:30	Fine	65.8	67.3	64.0	58.3	65

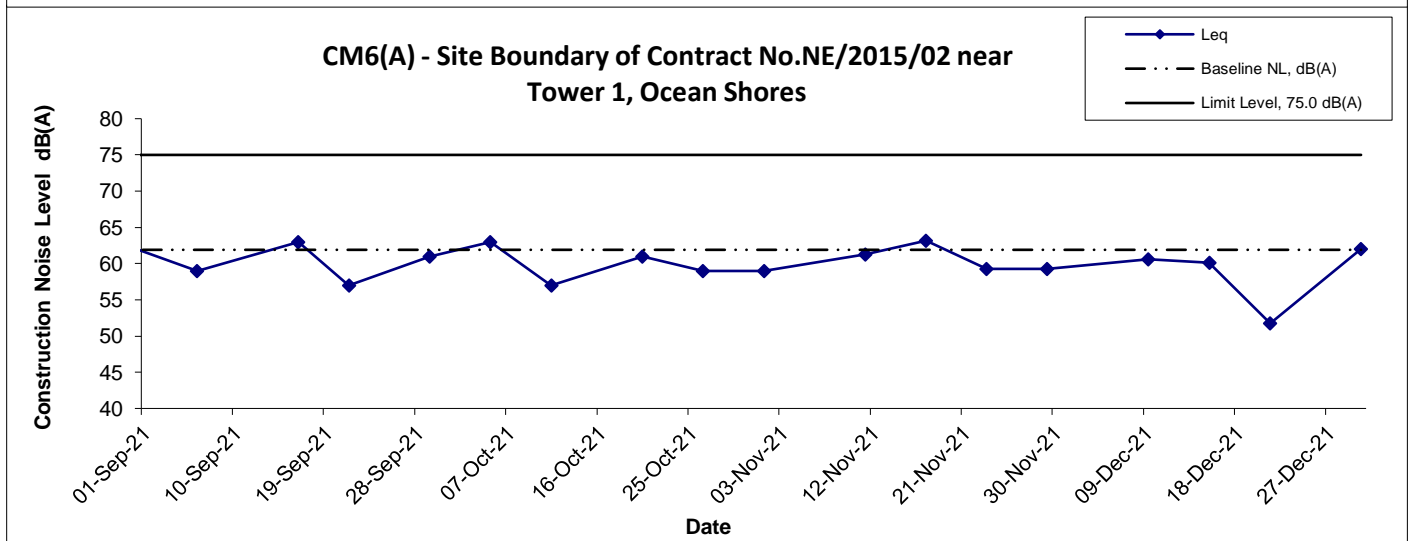
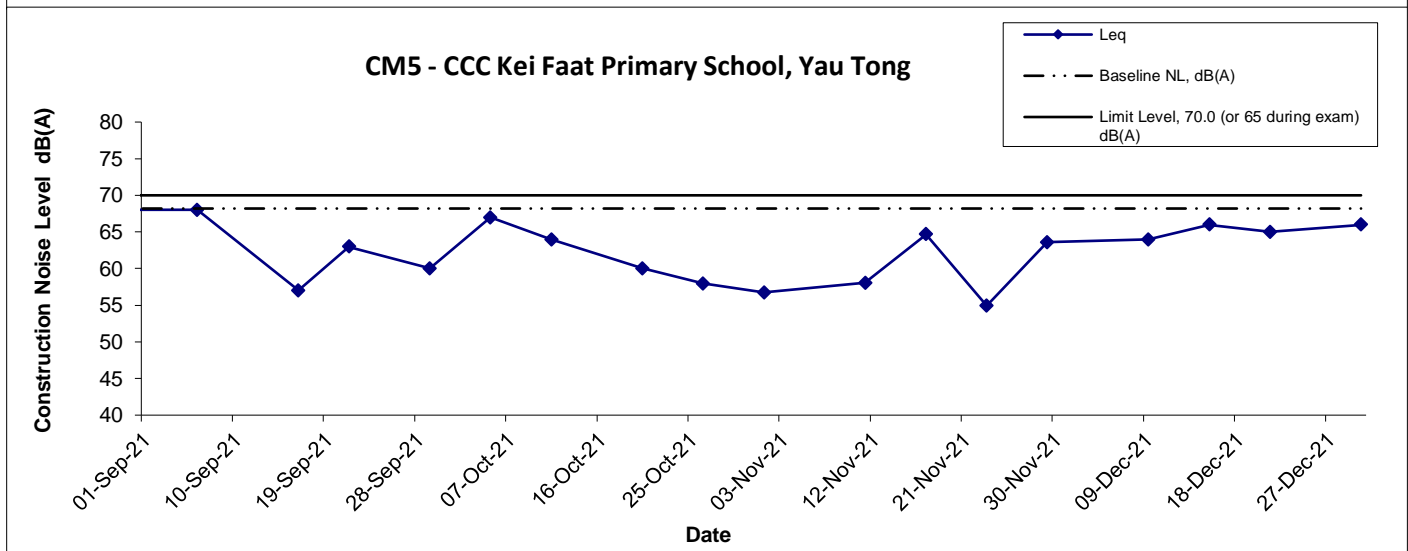
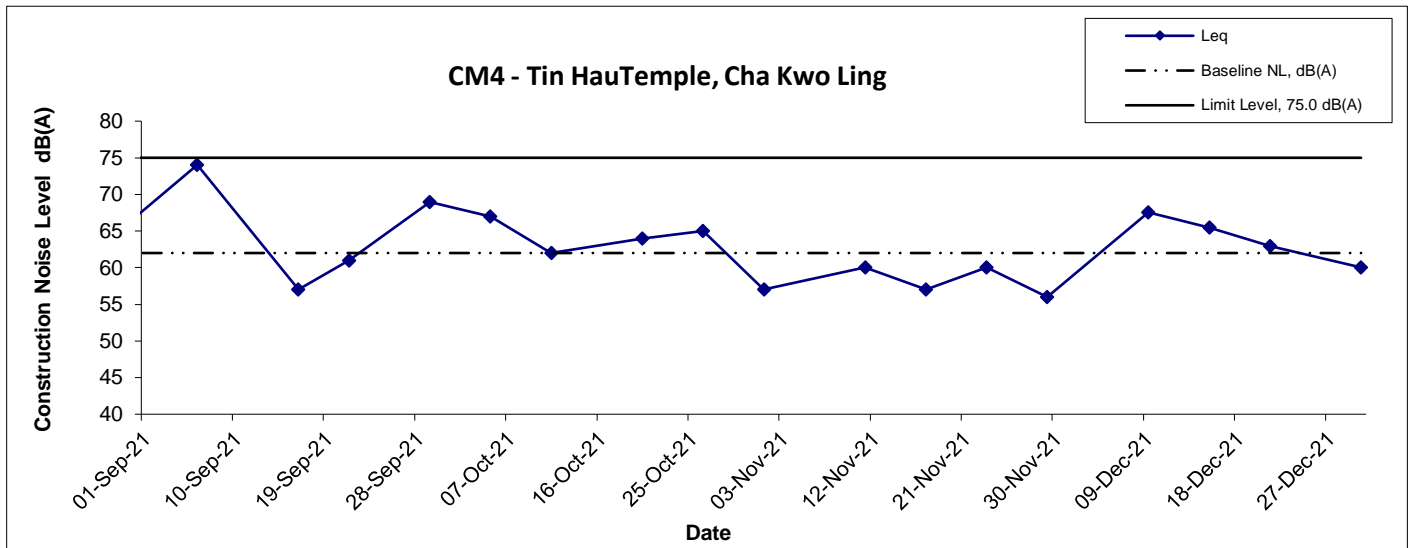
Location CM8(A) - Park Central, L1/F Open Space Area							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
09-Dec-21	13:30	Sunny	63.6	65.8	61.2	69.1	64 Measured ≤ Baseline
15-Dec-21	11:30	Fine	64.3	66.4	61.2	69.1	64 Measured ≤ Baseline
21-Dec-21	13:00	Rainy	64.9	68.3	61.3	69.1	65 Measured ≤ Baseline
30-Dec-21	13:00	Fine	63.7	64.5	62.9	69.1	64 Measured ≤ Baseline

Noise Levels



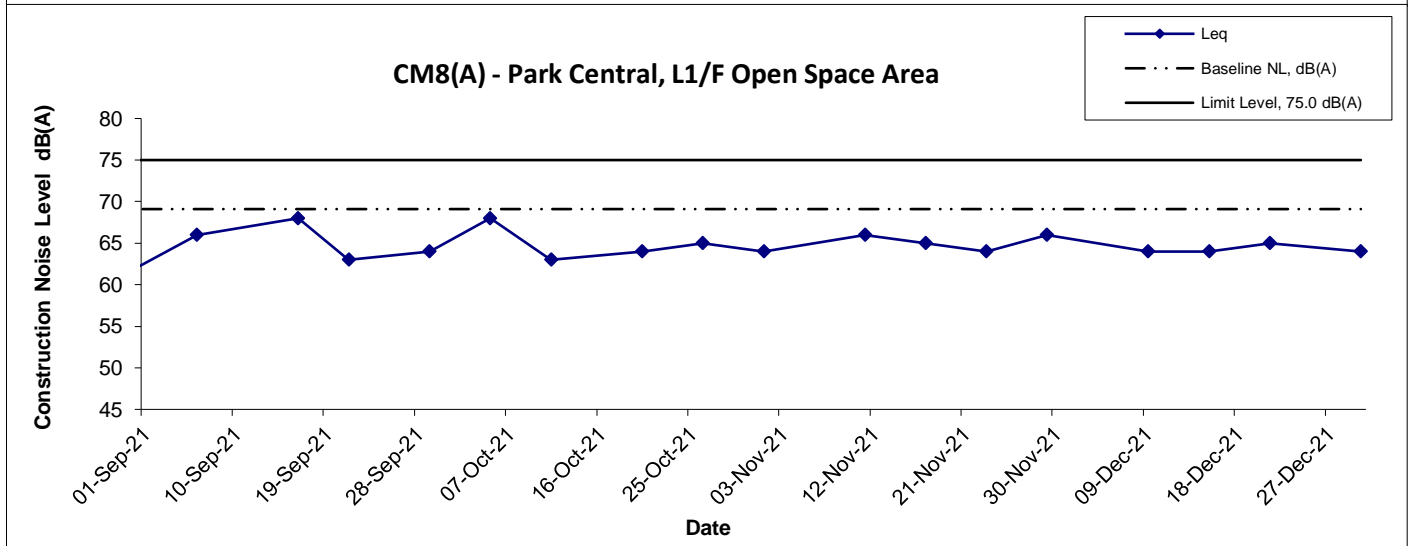
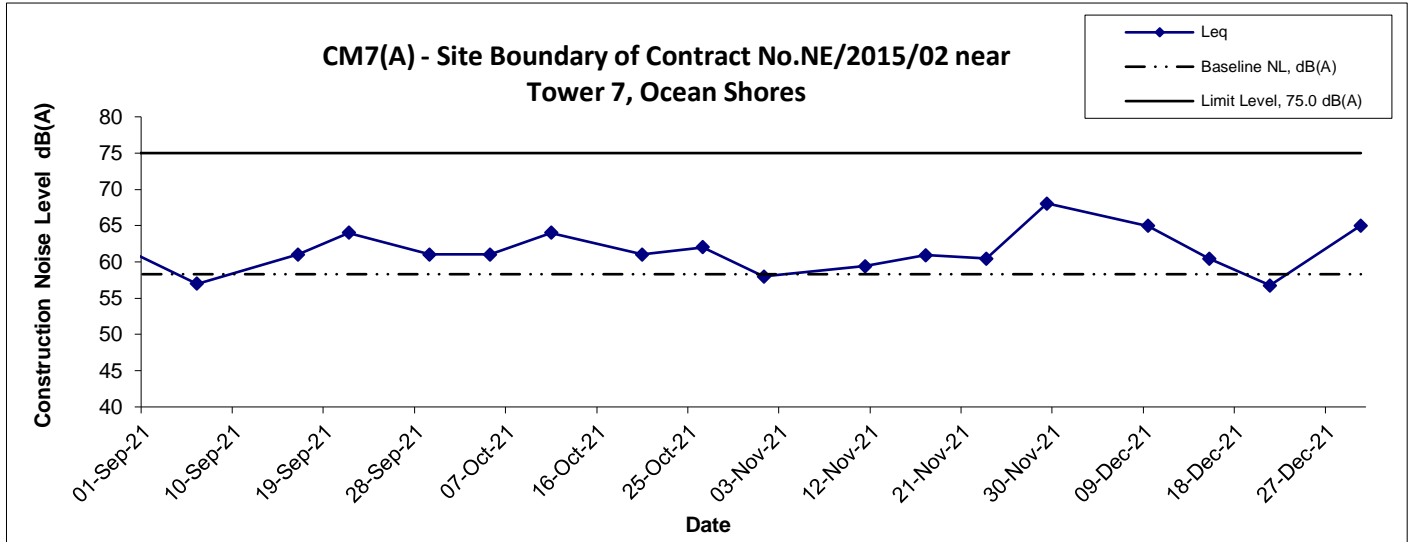
Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date Dec-21	Appendix G	

Noise Levels



Title	Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction	Scale	N.T.S	Project	No. MA16034	CINOTECH
	Graphical Presentation of Construction Noise Monitoring Results	Date	Dec-21	Appendix	G	

Noise Levels



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Construction Noise Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date Dec-21	Appendix G	

Appendix G - Noise Monitoring Results

(Restricted Hours - 19:00 to 23:00 on all other days & 07:00 to 23:00 holidays)

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong												
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level			
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}				
3-Dec-21	22:00	Fine	60.9	62.4	58.7	61.0	64.4	61 Measured ≤ Baseline				
	22:05		61.2	63.0	58.6							
	22:10		61.0	62.7	58.7							
10-Dec-21	21:45	Fine	61.0	62.9	59.4	60.9			64.4	61 Measured ≤ Baseline		
	21:50		60.9	62.8	59.2							
	21:55		60.9	62.7	59.1							
17-Dec-21	22:00	Fine	61.0	62.9	59.4	60.9					64.4	61 Measured ≤ Baseline
	22:05		60.9	62.8	59.2							
	22:10		60.9	62.7	59.1							
24-Dec-21	20:00	Fine	65.8	67.9	63.1	65.8	64.4	60				
	20:05		65.7	67.7	63.0							
	20:10		65.8	67.7	63.2							
31-Dec-21	21:00	Fine	62.7	65.3	60.7	62.5			64.4	63 Measured ≤ Baseline		
	21:05		62.5	65.1	60.5							
	21:10		62.4	65.2	60.3							

Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong												
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level			
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}				
3-Dec-21	22:25	Fine	59.9	62.0	57.2	59.8	62.2	60 Measured ≤ Baseline				
	22:30		59.8	62.3	57.4							
	22:35		59.7	62.1	57.4							
10-Dec-21	21:25	Fine	61.1	63.4	59.1	61.1			62.2	61 Measured ≤ Baseline		
	21:30		61.2	63.3	58.9							
	21:35		61.0	63.4	58.7							
17-Dec-21	22:20	Fine	61.1	63.4	59.1	61.1					62.2	61 Measured ≤ Baseline
	22:25		61.2	63.3	58.9							
	22:30		61.0	63.4	58.7							
24-Dec-21	20:30	Fine	64.7	66.1	61.8	64.5	62.2	61				
	20:35		64.5	66.0	61.7							
	20:40		64.4	65.9	61.6							
31-Dec-21	21:30	Fine	62.2	64.5	60.1	62.1			62.2	62 Measured ≤ Baseline		
	21:35		62.1	64.4	60							
	21:40		62	64.5	60.1							

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong												
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level			
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}				
3-Dec-21	22:45	Fine	61.1	62.8	57.2	60.7	64.7	61 Measured ≤ Baseline				
	22:50		60.5	62.3	58.1							
	22:55		60.4	62.4	58.2							
10-Dec-21	21:00	Fine	62.1	64.3	60.4	61.0			64.7	61 Measured ≤ Baseline		
	21:05		62.2	64.1	60.4							
	21:10		56.9	60.3	52.4							
17-Dec-21	22:40	Fine	62.1	64.3	60.4	62.1					64.7	62 Measured ≤ Baseline
	22:45		62.2	64.1	60.4							
	22:50		62.0	64.3	60.5							
24-Dec-21	20:00	Fine	57.8	60.9	55.6	62.5	64.7	63 Measured ≤ Baseline				
	20:30		64.4	65.9	61.6							
	22:00		62.9	65.4	60.5							
31-Dec-21	22:00	Fine	63.1	65.7	60.8	63.0			64.7	63 Measured ≤ Baseline		
	22:05		63	65.6	60.7							
	22:10		62.9	65.4	60.2							

Location CM6(A) - Site Boundary of Contract No. NE/2015/02 near Tower 1, Ocean Shores												
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level			
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}				
9-Dec-21	19:00	Fine	57.9	60.1	54.9	58.2	60.2	58 Measured ≤ Baseline				
	19:05		58.7	61.2	55.3							
	19:10		58.1	60.3	55.2							
15-Dec-21	19:00	Fine	56.9	59.3	53.1	57.3			60.2	57 Measured ≤ Baseline		
	19:05		57.4	60.2	54.6							
	19:10		57.7	60.7	54.9							
21-Dec-21	19:00	Rainy	57.9	61.1	55.8	57.8					60.2	58 Measured ≤ Baseline
	19:05		57.7	61.0	55.7							
	19:10		57.8	60.9	55.6							
30-Dec-21	19:00	Fine	62.1	64.3	60.7	62.6	60.2	59				
	19:05		62.7	64.1	60.2							
	19:10		63.0	64.4	59.8							

Appendix G - Noise Monitoring Results

(Restricted Hours - 2300-0700 on all days)

Location CM1 - Nga Lai House, Yau Lai Estate Phase 1, Yau Tong									
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}	
3-Dec-21	23:45	Fine	60.2	62.9	58.3	60.2	62.8	60 Measured ≤ Baseline	
	23:50		60.1	62.3	58.0				
	23:55		60.2	62.1	58.1				
10-Dec-21	23:00	Fine	57.8	59.9	55.1	57.4	63.7	57 Measured ≤ Baseline	
	23:05		57.2	59.8	55.1				
	23:10		57.3	59.7	55.2				
17-Dec-21	23:00	Fine	56.9	58.2	54.3	56.8	63.7	57 Measured ≤ Baseline	
	23:05		56.7	58.3	54.1				
	23:10		56.8	58.1	54.0				
24-Dec-21	23:00	Fine	58.9	60.6	56.3	58.7	63.7	59 Measured ≤ Baseline	
	23:05		58.7	60.5	56.2				
	23:10		58.6	60.4	56.1				
31-Dec-21	23:45	Fine	56.1	58.7	54.7	56.1	62.8	56 Measured ≤ Baseline	
	23:50		56.2	58.8	54.7				
	23:55		56.0	58.5	54.4				

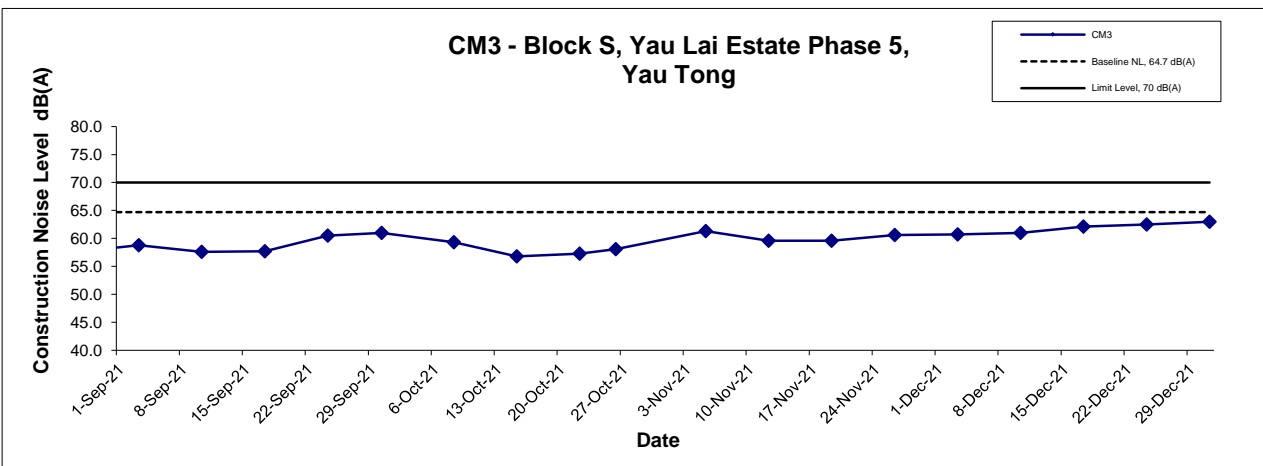
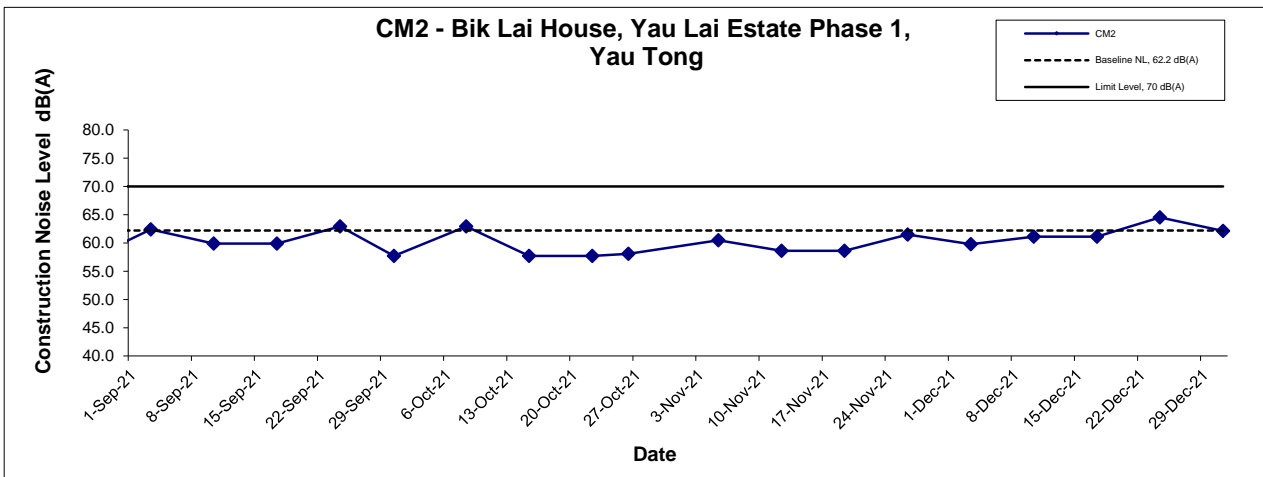
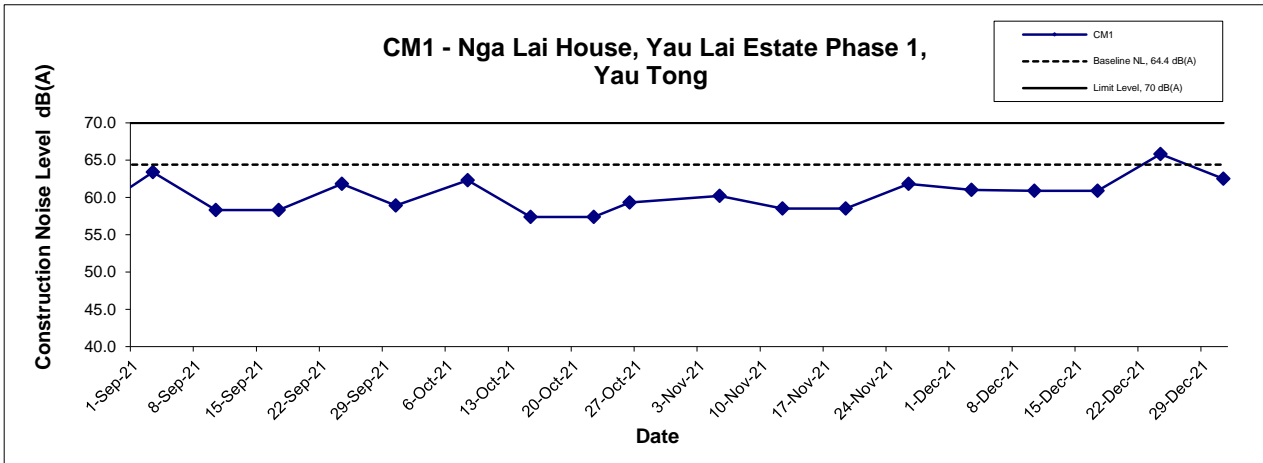
Location CM2 - Bik Lai House, Yau Lai Estate Phase 1, Yau Tong									
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}	
3-Dec-21	23:25	Fine	59.8	62.0	57.1	59.9	61.6	60 Measured ≤ Baseline	
	23:30		60.0	62.3	57.1				
	23:35		59.9	62.4	57.6				
10-Dec-21	23:25	Fine	57.2	59.3	55.3	57.2	61.6	57 Measured ≤ Baseline	
	23:30		57.3	59.4	55.7				
	23:35		57.1	59.6	55.2				
17-Dec-21	23:25	Fine	56.9	58.2	54.0	56.9	61.6	57 Measured ≤ Baseline	
	23:30		57.0	58.6	55.1				
	23:35		56.9	58.1	54.2				
24-Dec-21	23:25	Fine	58.2	60.1	56.3	58.1	61.6	58 Measured ≤ Baseline	
	23:30		58.1	60.1	56.2				
	23:35		58.0	59.9	56.0				
31-Dec-21	23:25	Fine	56.9	59.1	54.8	56.8	61.6	57 Measured ≤ Baseline	
	23:30		56.8	59.0	54.7				
	23:35		56.7	58.9	54.6				

Location CM3 - Block S, Yau Lai Estate Phase 5, Yau Tong									
Date	Time	Weather	dB (A) (5-min)				Average L _{eq}	Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}		L _{eq}	
3-Dec-21	23:00	Fine	59.2	61.3	57.3	59.1	64.0	59 Measured ≤ Baseline	
	23:05		59.0	61.2	57.2				
	23:10		59.1	61.3	57.3				
10-Dec-21	23:45	Fine	60.2	62.3	55.2	59.5	62.9	60 Measured ≤ Baseline	
	23:50		59.3	62.0	55.9				
	23:55		59.0	62.1	55.7				
17-Dec-21	22:40	Fine	55.7	57.9	53.4	55.5	64.0	56 Measured ≤ Baseline	
	22:45		55.8	58.0	53.6				
	22:50		55.1	57.0	53.2				
24-Dec-21	23:45	Fine	57.9	59.7	55.6	57.8	62.9	58 Measured ≤ Baseline	
	23:50		57.8	59.8	55.5				
	23:55		57.7	59.8	55.6				
31-Dec-21	23:00	Fine	57.3	59.8	55.1	57.2	64.0	57 Measured ≤ Baseline	
	23:05		57.2	59.7	55.0				
	23:10		57.1	59.6	55.1				

Remark:

"Measured ≤ Baseline" means that the averaged measured Leq is smaller than the baseline Leq, and therefore the measured levels are not valid exceedances.

Noise Levels (Restricted Hours - 19:00 - 23:00 on normal weekdays)



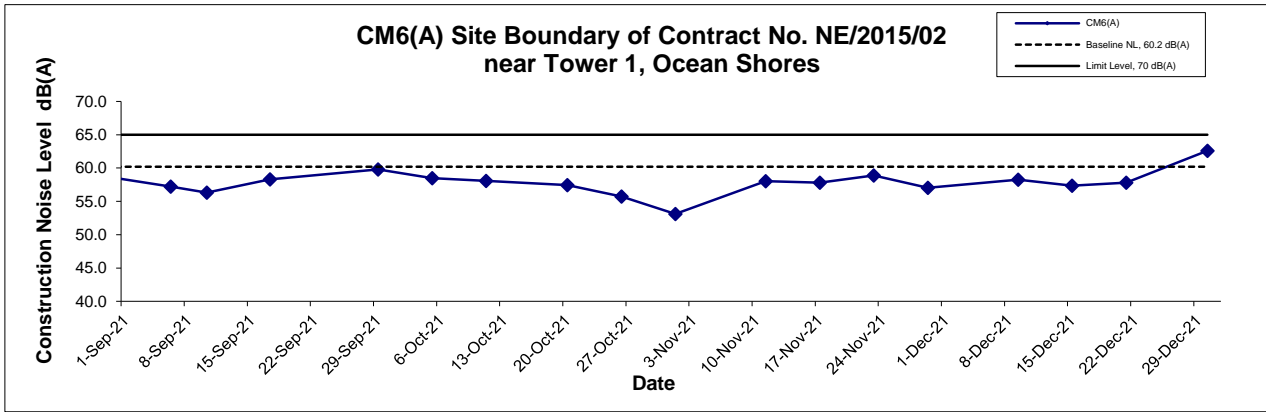
Title
 Agreement No. CE/59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel -
 Design and Construction
 Graphical Presentation of Restricted Noise Monitoring Results

Scale
 N.T.S
Date
 Dec-2021

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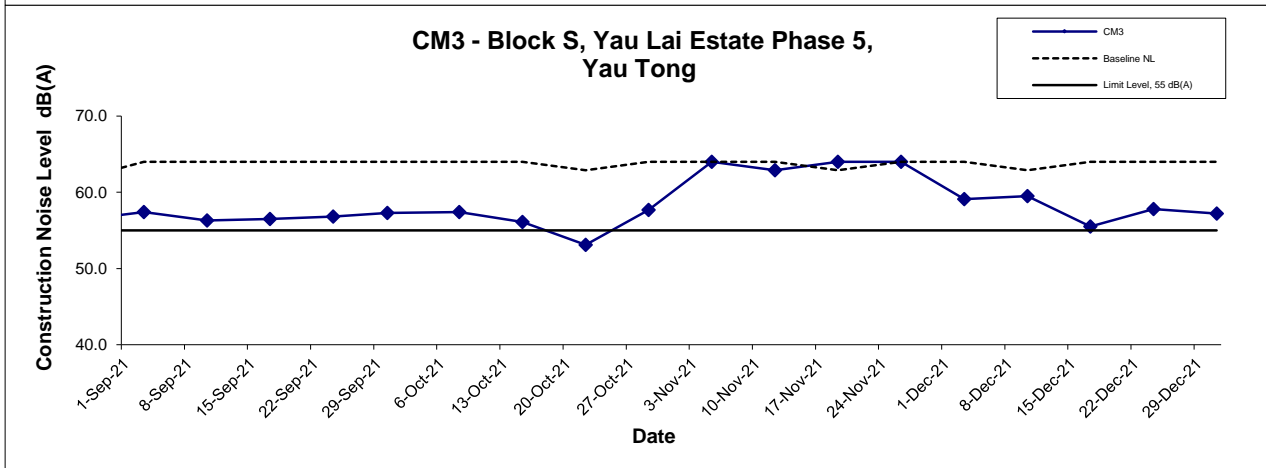
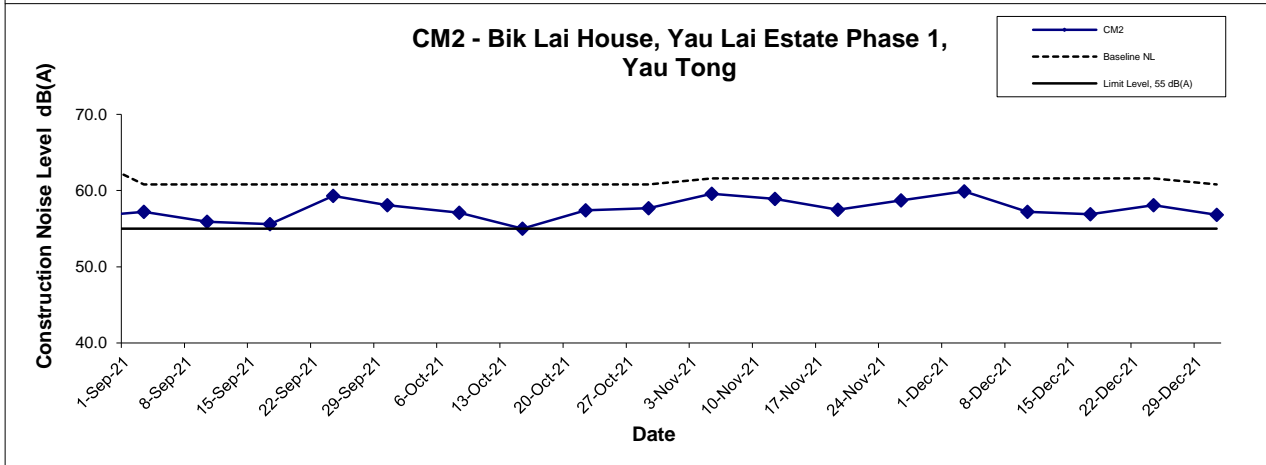
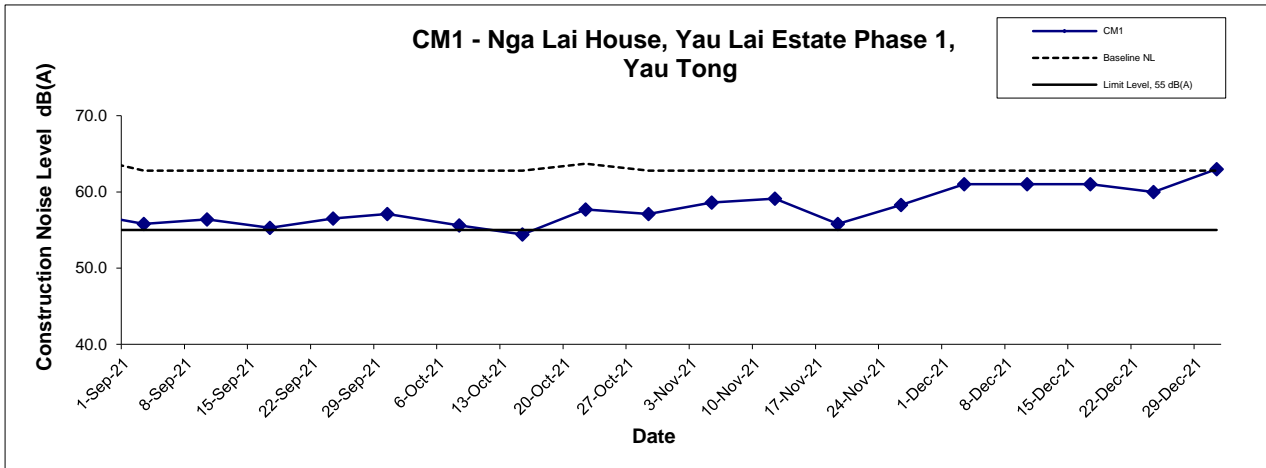


Noise Levels
(Restricted Hours - 19:00 - 23:00 on normal weekdays)



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Restricted Noise Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date Dec-2021	Appendix G	

Noise Levels (Restricted Hours - 2300-0700 on normal weekdays)



Title Agreement No. CE/59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction Graphical Presentation of Restricted Noise Monitoring Results	Scale N.T.S	Project No. MA16034	
	Date Dec-2021	Appendix G	

**APPENDIX I
MARINE WATER QUALITY
MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 01 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
C1	Sunny	Moderate	10:00	Surface	1.1	22.6	8.3	8.2	33.5	33.5	98.7	96.1	7.0	6.8	6.8	3.5	3.4	4.0	7.8	7.7	6.2			
					22.6	8.2	33.5	93.4	6.7	3.4	7.6													
					22.6	8.2	33.5	94.2	6.7	4.0	6.0													
				Middle	9.1	22.6	8.2	8.2	33.5	33.5	93.3	93.8	6.6	6.7		6.6	3.9		3.9	4.7		4.7	5.6	5.8
					22.6	8.2	33.5	93.0	6.6	4.7	4.9													
					22.6	8.2	33.5	93.2	6.6	4.7	5.3													
				Bottom	16.4	22.6	8.2	8.2	33.5	33.5	93.2	93.1	6.6	6.6		6.6	4.7		4.7	6.2		6.0		
					22.6	8.2	33.4	33.4	93.4	92.7	6.6	1.6	1.6	6.5		1.6	2.7		2.6	5.2		5.2		
					22.9	8.2	33.4	33.4	92.1	92.3	6.5	2.6	2.6	6.5		2.6	5.1		5.2					
C2	Sunny	Moderate	9:06	Surface	1.0	23.0	8.1	8.2	33.4	33.4	93.4	92.7	6.6	6.6	6.5	1.6	1.6	2.5	6.2	6.0	5.1			
					23.0	8.2	33.4	33.4	91.9	92.7	6.5	1.6	1.6	6.5		1.6	5.8		6.0					
					22.9	8.2	33.4	33.4	92.5	92.3	6.6	2.7	2.6	6.5		2.6	5.2		5.2					
				Middle	16.0	22.9	8.2	8.2	33.4	33.4	92.1	92.3	6.5	6.5		6.5	2.6		2.6	5.1		5.2		
					22.9	8.2	33.5	33.5	93.6	93.1	6.6	3.1	3.1	6.6		3.1	4.3		4.3					
					22.9	8.2	33.5	33.5	92.5	93.1	6.6	3.1	3.1	6.6		3.1	4.2		4.3					
				Bottom	31.0	22.9	8.2	8.2	33.5	33.5	93.6	93.1	6.6	6.6		6.6	3.1		3.1	5.9		6.0		
					22.9	8.2	32.8	32.7	93.3	92.9	6.6	2.0	2.1	6.6		2.0	2.1		6.1	6.0				
					22.9	8.2	32.8	32.7	92.5	92.9	6.6	2.0	2.1	6.6		2.0	2.1		6.1	6.0				
G1	Sunny	Moderate	9:34	Surface	1.1	22.9	8.3	8.2	32.6	32.7	93.3	92.9	6.6	6.6	6.6	2.1	2.1	2.6	5.9	6.0	4.9			
					22.9	8.2	32.8	32.7	92.5	92.9	6.6	2.0	2.1	6.6		2.0	2.1		6.1	6.0				
					22.7	8.2	33.4	33.3	94.0	93.3	6.7	2.8	2.8	6.6		2.8	4.8		4.6					
				Middle	4.1	22.8	8.2	8.2	33.2	33.3	92.6	93.3	6.6	6.6		6.6	2.9		2.8	4.4		4.6		
					22.8	8.2	33.5	33.5	94.3	94.2	6.7	2.9	3.0	6.7		2.9	3.0		4.3	4.2				
					22.7	8.2	33.5	33.5	94.0	94.2	6.7	3.1	3.0	6.7		3.1	4.0		4.2					
				Bottom	7.0	22.7	8.2	8.2	33.5	33.5	94.3	94.2	6.7	6.7		6.7	2.9		3.0	6.0		6.2		
					22.7	8.2	33.5	33.5	94.0	94.2	6.7	3.1	3.0	6.7		3.1	4.0		4.2					
					22.7	8.2	33.5	33.5	94.0	94.2	6.7	3.1	3.0	6.7		3.1	4.0		4.2					
G2	Sunny	Moderate	9:24	Surface	1.1	22.9	8.3	8.3	33.5	33.5	95.5	95.3	6.8	6.8	6.7	2.8	2.8	3.3	6.0	6.2	5.4			
					22.9	8.3	33.5	33.5	95.0	95.3	6.7	2.9	2.8	6.7		2.9	6.3		6.2					
					22.9	8.3	33.5	33.5	94.6	94.6	6.7	3.0	3.1	6.7		3.0	5.0		5.1					
				Middle	5.1	22.9	8.3	8.3	33.5	33.5	94.5	94.6	6.7	6.7		6.7	3.1		3.1	5.2		5.1		
					22.9	8.3	33.5	33.5	93.9	93.9	6.7	3.9	4.0	6.7		3.9	4.8		4.8					
					22.8	8.3	33.5	33.5	93.9	93.9	6.7	4.0	4.0	6.7		4.0	4.8		4.8					
				Bottom	9.0	22.8	8.3	8.3	33.5	33.5	93.9	93.9	6.7	6.7		6.7	4.0		4.0	7.0		7.1		
					22.8	8.3	33.2	33.2	92.4	92.2	6.6	2.4	2.4	6.5		2.4	2.4		7.1	7.1				
					22.8	8.3	33.2	33.2	91.9	92.2	6.5	2.4	2.4	6.5		2.4	2.4		7.1	7.1				
G3	Sunny	Moderate	9:39	Surface	1.0	23.0	8.2	8.2	33.2	33.2	92.2	92.2	6.5	6.5	6.5	3.3	3.2	3.0	6.8	6.7	6.6			
					23.0	8.2	33.2	33.2	92.2	92.2	6.5	3.2	3.2	6.5		3.2	6.6		6.7					
					22.8	8.2	33.4	33.4	92.2	92.2	6.5	3.2	3.2	6.5		3.2	6.6		6.7					
				Middle	4.1	22.8	8.2	8.2	33.4	33.4	92.2	92.2	6.5	6.5		6.5	3.2		3.2	6.1		6.2		
					22.8	8.2	33.4	33.4	92.4	92.4	6.6	3.4	3.4	6.6		3.4	6.2		6.2					
					22.7	8.2	33.4	33.4	92.3	92.4	6.6	3.3	3.4	6.6		3.3	6.2		6.2					
				Bottom	7.1	22.7	8.2	8.2	33.4	33.4	92.4	92.4	6.6	6.6		6.6	3.4		3.4	6.6		6.5		
					22.8	8.2	33.4	33.4	92.3	92.4	6.6	4.6	4.6	6.6		4.6	5.6		5.6					
					22.7	8.2	33.4	33.4	93.8	93.7	6.7	3.3	3.3	6.7		3.3	6.6		6.5					
G4	Sunny	Moderate	9:46	Surface	1.0	22.7	8.2	8.2	33.4	33.4	93.5	93.7	6.7	6.7	6.7	3.4	3.3	3.8	6.4	6.5	6.1			
					22.7	8.2	33.4	33.4	93.5	93.7	6.7	3.4	3.3	6.7		3.4	6.4		6.5					
					22.7	8.2	33.4	33.4	93.3	93.5	6.6	3.6	3.6	6.6		3.6	6.2		6.2					
				Middle	4.1	22.7	8.2	8.2	33.4	33.4	93.6	93.5	6.7	6.6		6.6	3.5		3.6	6.1		6.2		
					22.7	8.2	33.4	33.4	93.6	93.5	6.7	3.5	3.6	6.6		3.5	6.1		6.2					
					22.7	8.2	33.4	33.4	93.6	93.5	6.7	3.5	3.6	6.6		3.5	6.1		6.2					
				Bottom	6.9	22.7	8.2	8.2	33.4	33.4	93.3	93.2	6.6	6.6		6.6	4.6		4.6	5.6		5.6		
					22.7	8.2	33.5	33.4	93.0	93.2	6.6	4.6	4.6	6.6		4.6	5.6		5.6					
					22.7	8.2	33.5	33.4	93.0	93.2	6.6	4.6	4.6	6.6		4.6	5.6		5.6					
M1	Sunny	Moderate	9:30	Surface	1.1	22.7	8.3	8.3	33.4	33.3	97.3	95.8	6.9	6.8	6.8	2.0	2.0	2.3	5.6	5.7	5.6			
					22.7	8.2	33.3	33.3	94.3	95.8	6.7	2.0	2.0	6.8		2.0	5.7		5.7					
					22.7	8.2	33.3	33.4	95.6	94.9	6.8	2.3	2.3	6.8		2.3	5.6		5.6					
				Middle	3.1	22.7	8.3	8.3	33.4	33.4	94.1	94.9	6.7	6.8		6.8	2.3		2.3	5.5		5.6		
					22.7	8.2	33.4	33.4	94.1	94.9	6.7	2.6	2.6	6.8		2.6	5.4		5.5					
					22.7	8.2	33.5	33.5	95.7	95.1	6.8	2.6	2.6	6.8		2.6	5.4		5.5					
				Bottom	5.1	22.7	8.2	8.2	33.5	33.5	94.5	95.1	6.7	6.8		6.8	2.7		2.6	5.5		5.5		
					22.7	8.2	33.5	33.5	94.5	95.1	6.7	2.7	2.6	6.8		2.7	5.5		5.5					
					22.7	8.2	33.5	33.5	94.5	95.1	6.7	2.7	2.6	6.8		2.7	5.5		5.5					
M2	Sunny	Moderate	9:19	Surface	1.1	22.9	8.3	8.3	33.5	33.5	95.8	95.3	6.8	6.8	6.7	2.1	2.1	2.5	5.6	5.7	6.2			
					22.9	8.3	33.5	33.5	94.8	95.3	6.7	2.1	2.1	6.8		2.1	5.7		5.7					
					22.9	8.3	33.5	33.5	94.8	95.3	6.7	2.1	2.1	6.8		2.1	5.7		5.7					
				Middle	6.0	22.9	8.3	8.3	33.5	33.5	94.2	94.6	6.7	6.7		6.7	2.3		2.3	6.2		6.1		
					22.9	8.3	33.5	33.5	94.2	94.6	6.7	2.3	2.3	6.7		2.3	6.2		6.1					
					22.9	8.3	33.5	33.5	94.2	94.6	6.7	2.3	2.3	6.7		2.3	6.2		6.1					
				Bottom	11.0	22.9	8.3	8.3	33.5	33.5	94.5	94.6	6.7	6.7		6.7	3.1		3.1	6.8		6.1		
					22.9	8.3	33.5	33.5	94.2	94.4	6.7	3.0	3.1	6.7		3.0	7.0		7.0					
					22.9	8.3	33.5	33.5	94.2	94.4	6.7	3.0	3.1	6.7		3.0	7.0		7.0					
M3	Sunny	Moderate	9:42	Surface	1.1	23.0	8.2	8.2	33.4	33.4	91.9	91.6	6.5	6.5	6.5	2.6	2.5	3.1	5.4	5.7	5.3			
					23.0	8.2	33.4	33.4	91.2	91.6	6.5	2.5	2.5	6.5		2.5	5.9		5.7					
					22.8	8.2	33.4	33.4	92.0	92.2	6.5	3.1	3.1	6.5		3.1	5.1		5.1					
				Middle	4.0	22.8	8.2	8.2	33.4	33.4	92.3	92.2	6.6	6.5		6.5	3.2		3.1	5.1		5.1		
					22.8	8.2	33.4	33.4	92.3	92.2	6.6	3.2	3.1	6.5		3.2	5.1		5.1					
					22.7	8.2	33.4	33.4	92.6	92.6	6.6	3.6	3.6	6.6		3.6	5.1		5.1					
				Bottom	7.2	22.7	8.3	8.2	33.4	33.4	92.6	92.6	6.6	6.6		6.6	3.6		3.6	5.1		5.1		
					22.7	8.3	33.4	33.4	92.6	92.6	6.6	3.6	3.6	6.6		3.6	5.1		5.1					
					22.7	8.3	33.4	33.4	92.6	92.6	6.6	3.6	3.6	6.6		3.6	5.1		5.1					
M4	Sunny	Moderate	9:14	Surface	1.0	22.9	8.2	8.2	33.4	33.4	93.8	93.4	6.6											

Action and Limit Levels for Marine Water Quality on 1 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 3.7 NTU</u>	<u>C2: 4.0 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 7.2 mg/L</u>	<u>C2: 7.8 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 7.2 mg/L</u>	<u>C2: 7.8 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C2: 5.1 mg/L</u>		<u>C2: 5.5 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 01 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	15:25	Surface	1.0	23.0	23.0	8.3	8.2	33.4	33.4	98.0	96.6	6.9	6.8	6.8	1.7	1.8	2.8	5.8	5.9	6.9		
					23.0	8.2	33.4	95.1	6.7	1.8	6.0													
					22.9	22.9	8.2	33.5	94.8	6.7	2.2	6.9	7.1											
				Middle	9.0	22.9	22.9	8.2	8.2	33.5	33.5	94.4	94.6	6.7	6.7	6.7	2.2	2.2	2.2	7.3	7.3			
					Bottom	15.4	22.7	22.7	8.2	8.2	33.5	33.5	93.8	93.8	6.7	6.7	6.7	4.4	4.4	4.4	7.5		7.7	
						22.7	8.2	33.5	93.7	6.7	4.4	7.8												
C2	Sunny	Moderate	14:38	Surface	1.0	23.0	23.0	8.2	8.2	33.4	33.4	94.6	93.8	6.7	6.6	6.6	1.9	2.0	2.7	7.2	7.4	6.8		
					23.0	8.2	33.4	92.9	6.6	2.0	7.5													
					23.0	23.0	8.2	33.4	93.0	6.6	3.1	7.2	7.0											
				Middle	16.0	23.0	23.0	8.2	8.2	33.4	33.4	92.3	92.7	6.5	6.6	6.6	3.0	3.0	3.0	6.7	7.0			
					Bottom	31.0	23.0	23.0	8.2	8.2	33.4	33.4	92.2	92.2	6.5	6.5	6.5	3.3	3.2	3.2	5.8		6.0	
						23.0	8.2	33.4	92.2	6.5	3.1	6.1												
G1	Sunny	Moderate	15:01	Surface	1.0	22.9	22.9	8.2	8.2	32.9	33.0	94.8	94.7	6.7	6.7	6.7	2.0	1.9	2.4	7.7	7.8	6.8		
					22.9	8.2	33.1	94.6	6.7	1.9	7.8													
					22.8	22.8	8.2	33.4	94.7	6.7	2.5	7.1	7.0											
				Middle	4.0	22.8	22.8	8.2	8.2	33.4	33.4	94.4	94.9	6.7	6.7	6.7	2.5	2.5	2.5	6.8	7.0			
					Bottom	7.0	22.8	22.8	8.2	8.2	33.4	33.4	94.4	94.2	6.7	6.7	6.7	2.7	2.8	2.8	5.6		5.6	
						22.7	8.2	33.5	93.9	6.7	2.8	5.6												
G2	Sunny	Moderate	14:52	Surface	1.1	22.9	22.9	8.3	8.2	33.3	33.3	100.5	98.3	7.1	7.0	6.9	2.0	2.0	2.6	6.6	6.7	7.3		
					22.9	8.2	33.4	96.0	6.8	2.1	6.8													
					22.9	22.9	8.2	33.5	96.7	6.9	2.7	7.0	7.2											
				Middle	5.0	22.9	22.9	8.2	8.2	33.4	33.4	96.1	96.4	6.8	6.8	6.8	2.7	2.7	2.7	6.8	7.2			
					Bottom	9.1	22.8	22.8	8.2	8.2	33.5	33.5	95.2	94.8	6.8	6.7	6.7	3.0	3.0	3.0	8.0		7.9	
						22.8	8.2	33.5	94.4	6.7	3.0	7.8												
G3	Sunny	Moderate	15:05	Surface	1.0	23.1	23.0	8.2	8.2	33.2	33.3	94.0	94.2	6.7	6.7	6.7	2.0	2.0	2.7	6.2	6.3	6.9		
					22.9	8.2	33.4	94.3	6.7	2.0	6.3													
					22.8	22.8	8.2	33.4	94.6	6.7	2.6	7.0	7.1											
				Middle	4.1	22.8	22.8	8.2	8.2	33.4	33.4	94.1	94.4	6.7	6.7	6.7	2.6	2.6	2.6	7.2	7.1			
					Bottom	7.0	22.8	22.8	8.2	8.2	33.4	33.4	94.1	93.9	6.7	6.7	6.7	2.7	3.6	3.6	7.2		7.3	
						22.8	8.2	33.4	93.6	6.7	3.7	7.2												
G4	Sunny	Moderate	15:14	Surface	1.1	22.8	22.8	8.2	8.2	33.4	33.4	94.9	94.6	6.7	6.7	6.7	3.3	3.3	3.5	8.6	8.7	7.4		
					22.8	8.2	33.4	94.3	6.7	3.3	8.7													
					22.8	22.8	8.2	33.4	94.5	6.7	3.5	7.5	7.3											
				Middle	4.1	22.8	22.8	8.2	8.2	33.4	33.4	94.2	94.4	6.7	6.7	6.7	3.6	3.6	3.6	7.1	7.3			
					Bottom	7.0	22.8	22.8	8.2	8.2	33.4	33.4	94.2	94.1	6.7	6.7	6.7	3.7	3.7	3.7	6.4		6.2	
						22.8	8.2	33.4	93.9	6.7	3.7	6.0												
M1	Sunny	Moderate	14:57	Surface	1.1	22.7	22.7	8.3	8.2	33.2	33.3	99.6	97.7	7.1	7.0	6.9	2.0	2.0	2.0	5.2	5.4	6.5		
					22.8	8.2	33.3	95.8	6.8	2.1	5.6													
					22.8	22.8	8.3	33.3	97.1	6.9	1.9	6.9	7.0											
				Middle	3.2	22.8	22.8	8.2	8.2	33.3	33.3	95.2	96.2	6.8	6.8	6.8	2.0	2.0	2.0	7.0	7.0			
					Bottom	5.3	22.7	22.7	8.3	8.2	33.3	33.4	96.4	95.7	6.9	6.8	6.8	2.0	2.0	2.0	7.3		7.3	
						22.8	8.2	33.4	95.0	6.8	2.1	7.2												
M2	Sunny	Moderate	14:49	Surface	1.1	23.0	23.0	8.2	8.2	33.5	33.5	97.5	96.8	6.9	6.8	6.8	2.0	2.0	2.4	6.0	5.9	5.5		
					23.0	8.2	33.5	96.1	6.8	2.0	5.8													
					22.9	23.0	8.2	33.5	96.1	6.8	2.4	5.4	5.5											
				Middle	6.1	23.0	23.0	8.2	8.2	33.4	33.4	95.7	95.9	6.8	6.8	6.8	2.4	2.4	2.4	5.6	5.5			
					Bottom	11.0	22.8	22.9	8.2	8.2	33.5	33.5	94.6	94.5	6.7	6.7	6.7	2.7	2.7	2.7	5.2		5.2	
						22.9	8.2	33.5	94.3	6.7	2.8	5.2												
M3	Sunny	Moderate	15:09	Surface	1.1	23.1	23.1	8.2	8.2	33.3	33.3	94.1	93.9	6.7	6.6	6.6	3.1	3.1	3.3	5.8	5.7	7.0		
					23.1	8.2	33.4	93.6	6.6	3.1	5.6													
					22.9	22.8	8.2	33.4	94.2	6.7	2.8	6.9	7.0											
				Middle	4.1	22.8	22.8	8.2	8.2	33.4	33.4	93.5	93.9	6.6	6.7	6.7	2.8	2.8	2.8	7.1	7.0			
					Bottom	6.9	22.8	22.8	8.2	8.2	33.4	33.4	91.8	92.1	6.5	6.5	6.5	4.0	4.0	4.0	8.4		8.2	
						22.8	8.2	33.4	92.4	6.6	4.1	8.0												
M4	Sunny	Moderate	14:45	Surface	1.1	23.0	23.0	8.2	8.2	33.4	33.4	94.7	94.2	6.7	6.7	6.6	1.9	1.9	2.2	5.2	5.5	6.1		
					23.0	8.2	33.4	93.6	6.6	1.9	5.7													
					23.0	23.0	8.2	33.4	94.2	6.7	2.2	6.4	6.3											
				Middle	5.1	23.0	23.0	8.2	8.2	33.4	33.4	93.0	93.6	6.6	6.6	6.6	2.3	2.2	2.2	6.2	6.3			
					Bottom	9.1	23.0	23.0	8.2	8.2	33.4	33.4	93.2	93.1	6.6	6.6	6.6	2.4	2.4	2.4	6.5		6.6	
						23.0	8.2	33.4	92.9	6.6	2.4	6.6												
M5	Sunny	Moderate	15:21	Surface	1.1	22.7	22.8	8.2	8.2	33.4	33.4	97.0	96.2	6.9	6.8	6.8	2.6	2.4	3.5	4.8	4.9	5.8		
					22.8	8.2	33.4	95.4	6.8	2.3	5.0													
					22.6	22.6	8.2	33.4	94.0	6.7	3.8	5.9	5.8											
				Middle	6.1	22.6	22.6	8.2	8.2	33.4	33.4	93.4	93.7	6.7	6.7	6.7	3.9	3.8	3.8	5.6	5.8			
					Bottom	11.3	22.6	22.6	8.2	8.2	33.5	33.4	93.0	93.0	6.6	6.6	6.6	4.2	4.1	4.1	6.8		6.8	
						22.6	8.2	33.4	92.9	6.6	4.1	6.8												
M6	Sunny	Moderate	15:17	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	4.3	-	-	5.8			
					22.7	22.7	8.3	8.2	33.4	33.4	95.9	95.4	6.8	6.8	6.8	8.0	8.0	8.0	6.0	5.8				
					22.7	8.2	33.4	94.8	6.7	8.0	5.6													
				Middle	2.0	22.7	22.7	8.2	8.2	33.4	33.4	94.8	95.4	6.7	6.8	6.8	8.0	8.0	8.0	5.6		5.8		
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher.

Action and Limit Levels for Marine Water Quality on 1 December 2021 (Mid-Flood Tide)

<u>Parameter</u> <u>(unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C1: 5.2 NTU</u>	<u>C1: 5.7 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 7.1 mg/L</u>	<u>C1: 7.7 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 7.1 mg/L</u>	<u>C1: 7.7 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
	<u>C1: 9.2 mg/L</u>	<u>C1: 9.9 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 03 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
C1	Sunny	Moderate	11:31	Surface	1.0	22.2	22.2	8.3	8.3	33.4	33.5	99.0	97.0	7.1	7.0	6.9	1.4	1.5	2.2	3.1	3.2	3.7		
					22.3	8.3	33.5	95.0	6.8	6.8	1.5	2.1	3.2											
				Middle	9.1	22.2	22.2	8.3	8.3	33.5	33.5	95.3	94.7	95.0	6.8	6.8	6.8	2.0		2.1	4.7		4.0	
					22.2	8.3	33.5	94.6	6.8	6.8	2.0	2.1	3.2											
				Bottom	17.1	22.2	22.2	8.3	8.3	33.6	33.6	94.6	94.6	94.6	6.8	6.8	6.8	3.2		3.2	3.7		4.1	
					22.2	8.3	33.6	94.6	6.8	6.8	3.2	3.2	4.5											
C2	Sunny	Moderate	10:40	Surface	1.1	22.2	22.3	8.1	8.2	33.5	33.5	96.8	95.0	6.9	6.8	6.8	2.1	2.2	2.7	4.3	3.9	4.1		
					22.3	8.3	33.5	93.1	6.7	6.7	2.3	2.2	4.2											
				Middle	16.1	22.2	22.2	8.2	8.2	33.5	33.5	95.0	94.1	94.1	6.8	6.7	6.7	2.2		2.2	4.7		4.5	
					22.2	8.3	33.5	93.1	6.7	6.7	2.3	2.2	4.7											
				Bottom	31.0	22.1	22.1	8.3	8.3	33.6	33.6	94.6	94.4	94.4	6.8	6.8	6.8	3.7		3.6	4.0		3.9	
					22.1	8.3	33.6	94.4	6.8	6.8	3.6	3.6	3.8											
G1	Sunny	Moderate	11:05	Surface	1.1	22.1	22.1	8.3	8.3	33.1	33.1	96.7	93.9	7.0	6.8	6.7	0.6	0.6	1.3	3.4	3.9	3.7		
					22.2	8.2	33.0	91.1	6.6	6.6	0.6	0.6	4.3											
				Middle	4.2	22.2	22.2	8.3	8.3	33.3	33.4	94.7	93.7	93.7	6.8	6.7	6.7	1.1		1.2	4.2		4.0	
					22.2	8.2	33.4	92.7	6.7	6.7	1.2	1.2	3.7											
				Bottom	7.1	22.1	22.1	8.3	8.3	33.5	33.5	93.5	93.2	93.2	6.7	6.7	6.7	2.0		2.1	3.3		3.4	
					22.1	8.3	33.5	92.8	6.7	6.7	2.2	2.1	3.5											
G2	Sunny	Moderate	10:58	Surface	1.2	22.2	22.2	8.3	8.3	33.5	33.5	98.0	96.5	7.0	6.9	6.9	1.2	1.2	1.6	3.7	3.7	3.6		
					22.3	8.3	33.5	94.9	6.8	6.8	1.2	1.2	3.6											
				Middle	5.2	22.2	22.2	8.3	8.3	33.5	33.5	95.7	95.2	95.2	6.9	6.8	6.8	1.5		1.5	3.5		3.6	
					22.2	8.3	33.5	94.6	6.8	6.8	1.4	1.5	3.7											
				Bottom	9.0	22.1	22.1	8.3	8.3	33.5	33.5	94.1	93.9	93.9	6.8	6.8	6.8	2.3		2.3	3.6		3.5	
					22.1	8.3	33.5	93.7	6.7	6.7	2.2	2.3	3.4											
G3	Sunny	Moderate	11:08	Surface	1.0	22.1	22.1	8.3	8.3	33.3	33.3	97.7	95.7	7.0	6.9	6.8	0.9	0.9	1.7	3.7	3.8	3.9		
					22.2	8.3	33.3	93.7	6.7	6.7	0.9	0.9	3.8											
				Middle	4.1	22.0	22.0	8.3	8.3	33.5	33.4	94.2	93.9	93.9	6.8	6.8	6.8	1.9		1.9	4.4		4.1	
					22.0	8.3	33.4	93.5	6.7	6.7	1.9	1.9	3.7											
				Bottom	7.1	22.0	22.0	8.3	8.3	33.5	33.5	94.0	93.7	93.7	6.8	6.7	6.7	2.2		2.1	3.5		3.9	
					22.0	8.3	33.5	93.4	6.7	6.7	2.1	2.1	4.2											
G4	Sunny	Moderate	11:17	Surface	1.1	22.0	22.0	8.3	8.3	33.4	33.4	99.4	97.6	7.2	7.0	7.0	1.7	1.5	2.4	4.6	5.3	4.5		
					22.1	8.2	33.4	95.7	6.9	6.9	1.3	1.5	5.9											
				Middle	4.3	22.0	22.1	8.3	8.2	33.5	33.4	96.7	96.2	96.2	7.0	6.9	6.9	2.4		2.4	4.4		4.2	
					22.1	8.2	33.4	95.7	6.9	6.9	2.4	2.4	4.0											
				Bottom	7.1	22.0	22.0	8.2	8.2	33.5	33.4	95.4	94.9	94.9	6.9	6.8	6.8	3.2		3.2	3.3		4.0	
					22.0	8.2	33.4	94.3	6.8	6.8	3.2	3.2	4.6											
M1	Sunny	Moderate	11:02	Surface	1.1	22.1	22.2	8.3	8.3	33.5	33.5	99.5	97.2	7.2	7.0	6.9	1.1	1.2	1.2	3.5	3.4	3.5		
					22.2	8.3	33.5	94.9	6.8	6.8	1.2	1.2	3.3											
				Middle	3.0	22.2	22.2	8.3	8.3	33.5	33.5	95.7	95.2	95.2	6.9	6.8	6.8	1.2		1.2	3.9		3.9	
					22.2	8.3	33.5	94.7	6.8	6.8	1.2	1.2	3.8											
				Bottom	5.1	22.2	22.2	8.3	8.3	33.5	33.5	95.5	95.0	95.0	6.9	6.8	6.8	1.3		1.3	3.2		3.4	
					22.2	8.3	33.5	94.5	6.8	6.8	1.3	1.3	3.5											
M2	Sunny	Moderate	10:54	Surface	1.1	22.1	22.1	8.3	8.3	33.5	33.5	98.9	97.4	7.1	7.0	7.0	1.5	1.6	2.1	3.9	4.1	3.8		
					22.2	8.3	33.5	95.8	6.9	6.9	1.6	1.6	4.3											
				Middle	6.1	22.1	22.2	8.3	8.3	33.5	33.6	97.5	96.9	96.9	7.0	7.0	7.0	1.9		1.9	3.3		3.8	
					22.2	8.3	33.6	96.2	6.9	6.9	1.9	1.9	4.3											
				Bottom	11.0	22.2	22.2	8.3	8.3	33.6	33.6	96.4	96.2	96.2	6.9	6.9	6.9	3.0		2.9	3.6		3.6	
					22.2	8.3	33.6	95.9	6.9	6.9	2.8	2.9	3.6											
M3	Sunny	Moderate	11:11	Surface	1.1	22.1	22.1	8.3	8.3	33.5	33.5	97.6	96.3	7.0	6.9	6.9	1.9	1.8	1.9	4.0	4.0	4.1		
					22.2	8.3	33.4	95.0	6.8	6.8	1.7	1.8	3.9											
				Middle	4.2	22.1	22.1	8.3	8.3	33.5	33.5	95.8	95.3	95.3	6.9	6.8	6.8	1.9		2.0	3.2		3.6	
					22.1	8.3	33.4	94.7	6.8	6.8	2.0	2.0	4.0											
				Bottom	7.2	22.1	22.1	8.3	8.3	33.5	33.5	95.0	94.8	94.8	6.8	6.8	6.8	2.1		2.1	4.9		4.7	
					22.1	8.3	33.5	94.5	6.8	6.8	2.1	2.1	4.4											
M4	Sunny	Moderate	10:49	Surface	1.1	22.2	22.2	8.3	8.3	33.5	33.5	98.7	96.5	7.1	6.9	6.9	2.3	2.3	2.5	3.4	3.5	3.7		
					22.2	8.3	33.5	94.3	6.8	6.8	2.3	2.3	3.6											
				Middle	5.0	22.2	22.2	8.3	8.3	33.5	33.5	95.4	94.7	94.7	6.8	6.8	6.8	2.6		2.6	2.9		3.0	
					22.2	8.3	33.5	94.0	6.7	6.7	2.7	2.6	3.0											
				Bottom	9.1	22.2	22.2	8.3	8.3	33.6	33.5	94.9	94.6	94.6	6.8	6.8	6.8	2.7		2.6	5.0		4.8	
					22.2	8.3	33.5	94.2	6.8	6.8	2.6	2.6	4.5											
M5	Sunny	Moderate	11:26	Surface	1.2	22.2	22.2	8.3	8.3	33.4	33.4	98.6	96.4	7.1	6.9	6.9	2.0	1.9	2.0	5.3	4.8	4.0		
					22.3	8.2	33.5	94.1	6.8	6.8	1.8	1.9	4.2											
				Middle	6.0	22.2	22.2	8.3	8.2	33.5	33.5	95.5	94.8	94.8	6.9	6.8	6.8	2.3		2.1	2.8		3.4	
					22.2	8.2	33.5	94.1	6.7	6.7	1.9	2.1	3.9											
				Bottom	10.8	22.2	22.2	8.3	8.3	33.5	33.5	94.8	94.5	94.5	6.8	6.8	6.8	2.2		2.1	3.6		4.0	
					22.2	8.3	33.5	94.1	6.7	6.7	2.1	2.1	4.4											
M6	Sunny	Moderate	11:21	Surface	-	-	-	-	-	-	-	-	-	-	6.9	-	-	2.1	-	-	3.3			
					-	-	-	-	-	-	-	-	-	-	-	-	-		-					
				Middle	2.0	22.0	22.0	8.3	8.3	33.5	33.5	95.6	95.4	95.4	6.9	6.9	6.9		2.1	2.1		3.4	3.3	
					21.0	8.3	33.5	95.1	6.9	6.9	2.1	2.1	3.1											
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	-
					-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 3 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 4.4 NTU</u>	<u>C2: 4.7 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 4.6 mg/L</u>	<u>C2: 5.0 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 4.6 mg/L</u>	<u>C2: 5.0 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C2: 4.7 mg/L</u>		<u>C2: 5.1 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 03 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	16:20	Surface	1.1	22.3	22.3	8.3	8.3	33.5	33.5	98.7	96.9	7.1	6.9	6.9	2.0	2.0	2.1	3.5	3.7	4.6		
				Middle	9.0	22.3	22.3	8.3	8.3	33.5	33.5	96.4	95.5	6.8	6.8		2.0	2.0		3.8	4.3			
				Bottom	17.1	22.3	22.3	8.3	8.3	33.5	33.5	94.5	94.9	6.8	6.8		2.0	2.3		5.1	5.8			
C2	Sunny	Moderate	15:34	Surface	1.1	22.3	22.3	8.2	8.2	33.4	33.4	97.1	95.4	7.0	6.8	6.8	1.7	1.8	2.5	4.0	4.1	3.7		
				Middle	16.1	22.3	22.3	8.2	8.2	33.5	33.4	93.4	93.3	6.7	6.7		1.9	2.5		4.2	2.8			
				Bottom	31.7	22.3	22.2	8.2	8.2	33.4	33.5	93.1	93.1	6.7	6.7		2.4	3.1		3.4	4.2			
G1	Sunny	Moderate	15:58	Surface	1.0	22.2	22.3	8.3	8.3	32.9	32.7	95.7	92.9	6.9	6.7	6.7	0.9	0.9	2.2	3.6	4.0	4.4		
				Middle	4.1	22.2	22.1	8.3	8.2	33.3	33.2	91.4	92.9	6.6	6.7		1.6	1.7		4.4	5.2			
				Bottom	6.9	22.0	22.0	8.3	8.3	33.4	33.4	92.0	92.5	6.6	6.7		4.1	4.1		3.6	4.1			
G2	Sunny	Moderate	15:52	Surface	1.1	22.3	22.4	8.3	8.3	33.4	33.4	100.3	98.2	7.2	7.0	6.9	1.2	1.1	2.3	3.2	3.9	4.3		
				Middle	5.0	22.2	22.2	8.3	8.3	33.4	33.4	96.2	95.7	6.9	6.9		1.0	1.7		4.5	4.4			
				Bottom	9.0	22.2	22.2	8.3	8.3	33.5	33.5	95.2	93.4	6.8	6.7		1.7	4.0		4.2	4.7			
G3	Sunny	Moderate	16:02	Surface	1.5	22.3	22.3	8.3	8.2	33.4	33.4	94.7	94.5	6.8	6.8	6.8	0.8	0.8	1.5	6.7	6.2	5.0		
				Middle	4.0	22.2	22.2	8.3	8.2	33.4	33.4	94.5	94.3	6.8	6.8		1.3	1.4		5.6	5.0			
				Bottom	7.0	22.0	22.0	8.3	8.3	33.4	33.4	94.0	93.9	6.8	6.8		1.4	2.3		4.4	3.9			
G4	Sunny	Moderate	16:08	Surface	1.1	22.3	22.3	8.3	8.3	33.4	33.4	97.0	96.4	7.0	6.9	6.9	1.1	1.1	1.6	4.0	3.7	5.8		
				Middle	4.1	22.3	22.3	8.3	8.3	33.4	33.4	96.2	95.9	6.9	6.9		1.6	1.6		3.4	6.8			
				Bottom	7.1	22.2	22.2	8.2	8.2	33.4	33.4	95.6	94.9	6.9	6.8		1.5	2.0		6.4	6.8			
M1	Sunny	Moderate	15:56	Surface	1.0	22.3	22.3	8.3	8.3	33.2	33.2	95.9	95.4	6.9	6.8	6.8	0.9	0.9	1.2	6.1	7.0	6.2		
				Middle	3.1	22.3	22.3	8.3	8.3	33.3	33.3	95.1	95.5	6.8	6.8		0.8	0.8		7.8	5.2			
				Bottom	4.9	22.2	22.2	8.3	8.2	33.4	33.4	94.2	94.8	6.8	6.8		1.9	2.0		5.5	6.4			
M2	Sunny	Moderate	15:45	Surface	1.0	22.2	22.3	8.3	8.3	33.5	33.5	101.9	99.7	7.3	7.1	7.1	1.1	1.0	1.9	6.1	5.6	5.2		
				Middle	6.1	22.2	22.3	8.3	8.3	33.5	33.5	97.4	97.7	7.0	7.0		1.0	1.5		5.0	4.9			
				Bottom	11.0	22.2	22.2	8.3	8.3	33.6	33.6	95.6	95.5	6.9	6.8		1.5	3.2		4.7	5.3			
M3	Sunny	Moderate	16:05	Surface	1.1	22.2	22.2	8.3	8.3	33.4	33.4	96.2	95.9	6.9	6.9	6.9	1.6	1.4	2.1	4.9	4.6	5.0		
				Middle	3.9	22.1	22.1	8.3	8.3	33.4	33.4	95.2	95.4	6.8	6.9		1.3	2.1		4.2	5.0			
				Bottom	7.0	22.1	22.1	8.3	8.3	33.5	33.4	95.5	95.0	6.9	6.8		2.1	2.7		5.8	5.4			
M4	Sunny	Moderate	15:40	Surface	1.0	22.2	22.2	8.3	8.3	33.5	33.5	94.8	95.0	7.1	6.8	6.8	2.3	2.3	2.6	6.1	5.6	5.2		
				Middle	5.1	22.2	22.2	8.3	8.3	33.5	33.5	94.9	94.3	6.7	6.8		2.0	2.7		5.0	5.1			
				Bottom	9.0	22.2	22.2	8.3	8.3	33.5	33.5	93.7	93.8	6.7	6.7		2.7	2.7		4.9	5.1			
M5	Sunny	Moderate	16:17	Surface	1.0	22.2	22.2	8.3	8.3	33.4	33.4	97.5	96.4	7.0	6.9	6.9	2.0	1.9	2.4	6.1	5.4	5.4		
				Middle	6.2	22.2	22.2	8.2	8.2	33.5	33.4	95.3	95.4	6.8	6.8		1.9	2.0		4.7	5.9			
				Bottom	11.0	22.2	22.2	8.3	8.3	33.6	33.6	95.1	94.9	6.8	6.8		2.0	3.2		5.2	5.1			
M6	Sunny	Moderate	16:12	Surface	-	-	-	-	-	-	-	-	-	-	7.0	-	-	1.4	-	-	5.1			
				Middle	2.0	22.2	22.2	8.3	8.3	33.4	33.4	97.6	97.5	7.0		7.0	8.0		8.0	4.4		5.1		
				Bottom	-	22.2	-	8.3	-	33.4	-	97.4	-	7.0		-	-		-	-		5.8	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 3 December 2021 (Mid-Flood Tide)

<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C1: 2.8 NTU</u>	<u>C1: 3.0 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 4.4 mg/L</u>	<u>C1: 4.7 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 4.4 mg/L</u>	<u>C1: 4.7 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C1: 7.0 mg/L</u>		<u>C1: 7.5 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 06 December 2021
 (Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
C1	Sunny	Moderate	8:42	Surface	1.0	21.9	21.9	8.3	8.3	32.4	32.4	95.3	95.4	7.1	7.1	7.1	2.0	2.0	2.0	4.7	5.2	5.6		
					21.9	8.3	8.3	32.4	32.4	95.5	95.4	7.1	7.1	7.1	1.9	2.0	2.0	5.6						
					9.1	21.8	21.8	8.3	8.3	32.5	32.5	93.6	93.6	7.0	7.0	7.0	2.1	2.0	2.0	5.3				
				Middle	9.1	21.8	21.8	8.3	8.3	32.5	32.5	93.6	93.6	7.0	7.0	7.0	2.0	2.0	2.0	2.0	2.0		2.0	6.3
					Bottom	17.0	21.8	21.8	8.3	8.3	32.5	32.5	92.2	92.2	6.9	6.9	6.9	2.0	2.0	2.0	2.0		2.0	6.2
						17.0	21.8	21.8	8.3	8.3	32.5	32.5	92.1	92.2	6.9	6.9	6.9	2.0	2.0	2.0	2.0		2.0	5.4
C2	Sunny	Moderate	7:45	Surface	1.1	21.9	21.9	8.2	8.2	32.1	31.1	95.8	95.8	7.3	7.2	7.1	1.9	1.9	2.0	6.2	5.8	6.0		
					21.9	8.2	8.2	30.2	31.1	95.7	95.8	7.2	7.2	7.1	1.9	1.9	2.0	5.4						
					16.1	21.8	21.8	8.3	8.3	32.0	32.0	92.7	92.7	7.0	7.0	7.0	2.1	2.1	2.1	5.4				
				Middle	16.1	21.8	21.8	8.3	8.3	32.0	32.0	92.7	92.7	7.0	7.0	7.0	2.1	2.1	2.1	2.1	2.1		6.1	
					Bottom	31.1	21.8	21.8	8.3	8.3	32.1	32.1	91.9	91.9	6.9	6.9	6.9	2.0	2.0	2.0	2.0		2.0	6.0
						31.1	21.8	21.8	8.3	8.3	32.1	32.1	91.9	91.9	6.9	6.9	6.9	2.0	2.0	2.0	2.0		2.0	6.8
G1	Sunny	Moderate	8:11	Surface	1.1	21.8	21.8	8.3	8.3	32.7	32.7	95.2	95.2	7.1	7.1	7.1	3.0	3.0	3.0	5.8	6.3	5.8		
					21.8	8.3	8.3	32.7	32.7	95.1	95.2	7.1	7.1	7.1	3.0	3.0	3.0	6.8						
					4.1	21.8	21.8	8.3	8.3	32.7	32.7	93.8	93.9	7.0	7.0	7.0	2.9	3.0	3.0	5.1				
				Middle	4.1	21.8	21.8	8.3	8.3	32.7	32.7	93.9	93.9	7.0	7.0	7.0	3.1	3.0	3.0	3.0	3.0		6.1	
					Bottom	7.0	21.8	21.8	8.3	8.3	32.8	32.8	93.5	93.5	7.0	7.0	7.0	3.0	3.0	3.0	3.0		3.0	5.0
						7.0	21.8	21.8	8.3	8.3	32.8	32.8	93.5	93.5	7.0	7.0	7.0	3.0	3.0	3.0	3.0		3.0	5.9
G2	Sunny	Moderate	8:02	Surface	1.0	21.8	21.8	8.3	8.3	32.7	32.7	96.9	96.8	7.2	7.2	7.2	2.1	2.1	2.7	5.8	5.4	5.9		
					21.8	8.3	8.3	32.7	32.7	96.6	96.8	7.2	7.2	7.2	2.1	2.1	2.7	5.0						
					5.1	21.8	21.8	8.3	8.3	32.7	32.7	95.3	95.2	7.1	7.1	7.1	2.5	2.5	2.5	5.9				
				Middle	5.1	21.8	21.8	8.3	8.3	32.7	32.7	95.3	95.2	7.1	7.1	7.1	2.4	2.5	2.5	2.4	2.5		5.0	
					Bottom	9.0	21.7	21.7	8.3	8.3	32.7	32.7	92.4	92.5	6.9	6.9	6.9	3.5	3.4	3.4	3.4		3.4	7.4
						9.0	21.7	21.7	8.3	8.3	32.7	32.7	92.5	92.5	6.9	6.9	6.9	3.4	3.4	3.4	3.4		3.4	6.4
G3	Sunny	Moderate	8:14	Surface	1.1	21.8	21.8	8.3	8.3	32.6	32.6	94.1	94.0	7.0	7.0	7.0	2.6	2.5	2.6	7.1	7.1	5.5		
					21.8	8.3	8.3	32.6	32.6	93.9	94.0	7.0	7.0	7.0	2.5	2.5	2.5	2.5	2.5	7.0				
					4.0	21.8	21.8	8.3	8.3	32.7	32.7	92.7	92.8	6.9	6.9	6.9	2.2	2.2	2.2	2.2	2.2		4.7	
				Middle	4.0	21.8	21.8	8.3	8.3	32.7	32.7	92.9	92.8	6.9	6.9	6.9	2.2	2.2	2.2	2.2	2.2		5.2	
					Bottom	7.0	21.7	21.7	8.3	8.3	32.8	32.8	92.2	92.2	6.9	6.9	6.9	3.2	3.2	3.2	3.2		3.2	4.6
						7.0	21.7	21.7	8.3	8.3	32.8	32.8	92.1	92.2	6.9	6.9	6.9	3.2	3.2	3.2	3.2		3.2	4.6
G4	Sunny	Moderate	8:26	Surface	1.0	21.9	21.9	8.4	8.4	32.8	32.8	95.1	95.1	7.1	7.1	7.1	2.3	2.3	2.5	4.2	4.8	5.1		
					21.9	8.4	8.4	32.8	32.8	95.0	95.1	7.1	7.1	7.1	2.3	2.3	2.5	5.3						
					4.1	21.8	21.8	8.4	8.4	32.8	32.8	94.0	94.2	7.0	7.0	7.0	2.4	2.4	2.4	2.4	2.4		5.2	
				Middle	4.1	21.8	21.8	8.4	8.4	32.8	32.8	94.3	94.2	7.0	7.0	7.0	2.4	2.4	2.4	2.4	2.4		4.4	
					Bottom	7.2	21.6	21.6	8.3	8.3	32.8	32.8	92.3	92.3	6.9	6.9	6.9	2.9	2.9	2.9	2.9		2.9	5.2
						7.2	21.6	21.6	8.3	8.3	32.8	32.8	92.2	92.3	6.9	6.9	6.9	2.9	2.9	2.9	2.9		2.9	6.1
M1	Sunny	Moderate	8:06	Surface	1.1	21.8	21.8	8.3	8.3	32.7	32.7	94.7	94.6	7.1	7.1	7.0	2.9	2.9	3.1	5.6	5.3	4.7		
					21.8	8.3	8.3	32.7	32.7	94.5	94.6	7.1	7.1	7.0	2.9	2.9	3.1	4.9						
					3.0	21.8	21.8	8.3	8.3	32.7	32.7	93.1	93.0	6.9	6.9	6.9	3.2	3.3	3.3	3.3	3.3		4.2	
				Middle	3.0	21.8	21.8	8.3	8.3	32.7	32.7	92.9	93.0	6.9	6.9	6.9	3.3	3.3	3.3	3.3	3.3		5.0	
					Bottom	5.0	21.8	21.8	8.3	8.3	32.7	32.7	93.5	93.4	7.0	7.0	7.0	3.1	3.1	3.1	3.1		3.1	4.7
						5.0	21.8	21.8	8.3	8.3	32.7	32.7	93.3	93.4	7.0	7.0	7.0	3.1	3.1	3.1	3.1		3.1	3.8
M2	Sunny	Moderate	7:58	Surface	1.1	21.9	21.9	8.3	8.3	32.7	32.7	98.7	98.7	7.4	7.3	7.3	1.7	1.7	2.3	4.6	4.4	5.0		
					21.9	8.3	8.3	32.7	32.7	98.6	98.7	7.3	7.3	7.3	1.7	1.7	2.3	4.1						
					6.1	21.9	21.9	8.3	8.3	32.7	32.7	96.9	96.9	7.2	7.2	7.2	1.9	1.9	1.9	1.9	1.9		5.3	
				Middle	6.1	21.9	21.9	8.3	8.3	32.7	32.7	96.9	96.9	7.2	7.2	7.2	2.0	1.9	1.9	2.0	1.9		5.4	
					Bottom	11.0	21.8	21.8	8.3	8.3	32.7	32.7	94.7	94.6	7.1	7.1	7.1	3.2	3.2	3.2	3.2		3.2	5.3
						11.0	21.8	21.8	8.3	8.3	32.7	32.7	94.5	94.6	7.1	7.1	7.1	3.2	3.2	3.2	3.2		3.2	5.2
M3	Sunny	Moderate	8:21	Surface	1.1	21.8	21.8	8.3	8.3	32.5	32.5	92.5	92.5	6.9	6.9	6.9	2.6	2.7	3.0	5.6	5.5	5.0		
					21.8	8.3	8.3	32.6	32.5	92.5	92.5	6.9	6.9	6.9	2.7	2.7	3.0	5.3						
					4.1	21.8	21.8	8.3	8.3	32.7	32.7	92.1	92.1	6.9	6.9	6.9	2.8	2.8	2.8	2.8	2.8		4.4	
				Middle	4.1	21.8	21.8	8.3	8.3	32.7	32.7	92.0	92.1	6.9	6.9	6.9	2.8	2.8	2.8	2.8	2.8		5.1	
					Bottom	7.0	21.8	21.8	8.3	8.3	32.8	32.8	91.4	91.3	6.8	6.8	6.8	3.6	3.6	3.6	3.6		3.6	4.4
						7.0	21.8	21.8	8.3	8.3	32.8	32.8	91.2	91.3	6.8	6.8	6.8	3.6	3.6	3.6	3.6		3.6	5.0
M4	Sunny	Moderate	7:52	Surface	1.0	21.8	21.8	8.3	8.3	32.6	32.6	96.9	96.9	7.2	7.2	7.2	1.9	1.9	2.2	4.2	4.1	5.2		
					21.8	8.3	8.3	32.6	32.6	96.9	96.9	7.2	7.2	7.2	1.9	1.9	2.2	3.9						
					4.9	21.8	21.8	8.3	8.3	32.6	32.6	95.6	95.6	7.1	7.1	7.1	2.3	2.3	2.3	2.3	2.3		6.2	
				Middle	4.9	21.8	21.8	8.3	8.3	32.6	32.6	95.6	95.6	7.1	7.1	7.1	2.2	2.3	2.3	2.2	2.3		5.2	
					Bottom	9.1	21.8	21.8	8.3	8.3	32.6	32.6	95.3	95.3	7.1	7.1	7.1	2.4	2.4	2.4	2.4		2.4	6.1
						9.1	21.8	21.8	8.3	8.3	32.6	32.6	95.3	95.3	7.1	7.1	7.1	2.4	2.4	2.4	2.4		2.4	5.8
M5	Sunny	Moderate	8:37	Surface	1.0	21.9	21.9	8.3	8.3	32.3	32.3	95.7	95.7	7.1	7.1	7.1	1.9	1.9	1.9	5.2	5.1	4.6		
					21.9	8.3	8.3	32.3	32.3	95.6	95.7	7.1	7.1	7.1	1.9	1.9	1.9	1.9	1.9	5.0				
					6.1	21.9	21.9	8.3	8.3	32.3	32.3	94.6	94.7	7.1	7.1	7.1	2.0	2.0	2.0	2.0	2.0		5.1	
				Middle	6.1	21.9	21.9	8.3	8.3	32.3	32.3	94.8	94.7	7.1	7.1	7.1	2.0	2.0	2.0	2.0	2.0		4.2	
					Bottom	11.0	21.8	21.8	8.3	8.3	32.4	32.4	93.9	93.4	7.0	7.0	7.0	2.0	1.9	1.9	2.0		1.9	3.8
						11.0	21.8	21.8	8.3	8.3	32.4	32.4	92.9	93.4	7.0	7.0	7.0	1.9	1.9					

Action and Limit Levels for Marine Water Quality on 6 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 2.4 NTU</u>	<u>C2: 2.6 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 7.0 mg/L</u>	<u>C2: 7.5 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 7.0 mg/L</u>	<u>C2: 7.5 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
	<u>C2: 7.7 mg/L</u>	<u>C2: 8.3 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 06 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
C1	Sunny	Moderate	14:10	Surface	1.1	21.9	21.9	8.3	8.3	32.4	32.4	95.1	95.5	7.1	7.1	7.0	1.9	1.9	1.9	6.9	7.2	5.9		
					21.9	8.3	8.3	32.4	32.4	95.8	95.5	7.1	7.1	1.8	1.9	7.4								
					21.8	8.3	8.3	32.5	32.5	93.3	93.4	7.0	7.0	2.0	2.0	5.8								
				Middle	9.0	21.8	21.8	8.3	8.3	32.5	32.5	93.4	93.4	7.0	7.0	2.0	2.0	2.0		2.0	5.2		5.5	
					Bottom	17.0	21.8	21.8	8.3	8.3	32.5	32.5	91.5	91.6	6.8	6.8	6.8	6.8		2.0	2.0		5.7	5.2
						21.8	8.3	8.3	32.5	32.5	91.6	91.6	6.8	6.8	2.0	2.0	4.6	5.2						
C2	Sunny	Moderate	13:08	Surface	1.0	21.9	21.9	8.3	8.3	32.3	32.3	94.8	94.9	7.1	7.1	7.0	2.0	1.9	2.0	6.0	5.6	5.2		
					21.9	8.3	8.3	32.3	32.3	95.0	94.9	7.1	7.1	1.9	1.9	5.1								
					21.8	8.3	8.3	32.2	32.2	91.9	91.9	6.9	6.9	2.0	2.1	5.2								
				Middle	16.1	21.8	21.8	8.3	8.3	32.2	32.2	91.8	91.9	6.9	6.9	2.1	2.1	5.9		5.6				
					Bottom	31.0	21.8	21.8	8.3	8.3	32.1	32.1	91.4	91.5	6.8	6.8	6.8	6.8		2.0	2.0		4.0	4.5
						21.8	8.3	8.3	32.2	32.1	91.5	91.5	6.9	6.8	2.0	2.0	4.9	4.5						
G1	Sunny	Moderate	13:34	Surface	1.1	21.8	21.8	8.3	8.3	32.7	32.7	94.5	94.4	7.1	7.0	7.0	3.0	3.0	3.2	4.7	4.2	4.7		
					21.8	8.3	8.3	32.7	32.7	94.3	94.4	7.0	7.0	3.0	3.1	3.7								
					21.8	8.3	8.3	32.7	32.7	93.4	93.4	7.0	7.0	3.1	3.1	4.6								
				Middle	4.0	21.8	21.8	8.3	8.3	32.7	32.7	93.4	93.4	7.0	7.0	3.1	3.1	3.7		4.2				
					Bottom	7.2	21.8	21.8	8.3	8.3	32.8	32.8	92.9	92.9	6.9	6.9	6.9	6.9		3.5	3.5		5.8	5.6
						21.8	8.3	8.3	32.8	32.8	92.8	92.9	6.9	6.9	3.5	3.5	5.4	5.6						
G2	Sunny	Moderate	13:23	Surface	1.0	21.8	21.8	8.3	8.3	32.7	32.7	96.2	96.2	7.2	7.2	7.1	2.2	2.2	2.5	4.7	4.4	5.5		
					21.8	8.3	8.3	32.7	32.7	96.1	96.2	7.2	7.2	2.2	2.2	4.1								
					21.8	8.3	8.3	32.7	32.7	95.0	95.2	7.1	7.1	2.3	2.3	5.3								
				Middle	5.1	21.8	21.8	8.3	8.3	32.7	32.7	95.3	95.2	7.1	7.1	2.3	2.3	6.4		5.9				
					Bottom	9.0	21.7	21.7	8.3	8.3	32.7	32.7	92.6	92.8	6.9	6.9	6.9	6.9		3.1	3.1		5.9	6.4
						21.7	8.3	8.3	32.7	32.7	93.0	92.8	7.0	6.9	3.1	3.1	6.8	6.4						
G3	Sunny	Moderate	13:39	Surface	1.0	21.7	21.8	8.3	8.3	32.6	32.6	93.8	93.8	7.0	7.0	6.9	3.2	3.2	3.4	5.6	5.7	4.9		
					21.8	8.3	8.3	32.6	32.6	93.7	93.8	7.0	7.0	3.2	3.2	5.7								
					21.8	8.3	8.3	32.7	32.7	91.9	92.0	6.9	6.9	3.4	3.4	4.4								
				Middle	4.0	21.8	21.8	8.3	8.3	32.7	32.7	92.0	92.0	6.9	6.9	6.9	6.9	3.3		3.4	5.1		4.8	
					Bottom	7.0	21.7	21.7	8.3	8.3	32.8	32.8	91.9	91.9	6.9	6.9	6.9	6.9		3.8	3.8		4.4	4.4
						21.7	8.3	8.3	32.8	32.8	91.8	91.9	6.9	6.9	3.7	3.8	4.4	4.4						
G4	Sunny	Moderate	13:51	Surface	1.0	21.9	21.9	8.3	8.4	32.8	32.8	94.9	94.8	7.1	7.1	7.0	2.4	2.4	2.4	4.2	4.8	5.4		
					21.9	8.4	8.4	32.8	32.8	94.7	94.8	7.1	7.1	2.3	2.4	5.3								
					21.7	8.4	8.4	32.8	32.8	93.2	93.3	7.0	7.0	2.4	2.4	4.7								
				Middle	4.2	21.7	21.7	8.4	8.4	32.8	32.8	93.3	93.3	7.0	7.0	2.4	2.4	2.4		2.4	5.6		5.2	
					Bottom	7.1	21.6	21.6	8.4	8.3	32.8	32.8	92.1	92.1	6.9	6.9	6.9	6.9		2.6	2.5		6.0	6.4
						21.6	8.3	8.3	32.8	32.8	92.0	92.1	6.9	6.9	2.5	2.5	6.8	6.4						
M1	Sunny	Moderate	13:29	Surface	1.1	21.8	21.8	8.3	8.3	32.7	32.7	94.5	94.4	7.1	7.0	7.0	3.0	2.9	2.9	4.9	4.5	4.4		
					21.8	8.3	8.3	32.7	32.7	94.3	94.4	7.0	7.0	2.9	2.9	4.1								
					21.8	8.3	8.3	32.7	32.7	93.2	93.1	6.9	6.9	2.7	2.7	4.4								
				Middle	2.9	21.8	21.8	8.3	8.3	32.7	32.7	92.9	93.1	6.9	6.9	6.9	6.9	2.8		2.7	4.7		4.6	
					Bottom	5.0	21.8	21.8	8.3	8.3	32.7	32.7	93.2	93.2	7.0	7.0	7.0	7.0		2.9	2.9		4.2	4.2
						21.8	8.3	8.3	32.7	32.7	93.2	93.2	7.0	7.0	2.9	2.9	4.2	4.2						
M2	Sunny	Moderate	13:19	Surface	1.1	21.9	21.9	8.3	8.3	32.7	32.7	98.4	98.4	7.3	7.3	7.2	1.7	1.7	2.1	6.1	5.9	5.1		
					21.9	8.3	8.3	32.7	32.7	98.3	98.4	7.3	7.3	1.8	1.7	5.6								
					21.9	8.3	8.3	32.7	32.7	96.3	96.4	7.2	7.2	1.9	1.9	4.8								
				Middle	6.0	21.9	21.9	8.3	8.3	32.7	32.7	96.4	96.4	7.2	7.2	7.2	7.2	1.9		1.9	5.6		5.2	
					Bottom	11.0	21.8	21.8	8.3	8.3	32.7	32.7	94.4	94.3	7.0	7.0	7.0	7.0		2.7	2.8		3.8	4.2
						21.8	8.3	8.3	32.7	32.7	94.2	94.3	7.0	7.0	2.8	2.8	4.6	4.2						
M3	Sunny	Moderate	13:47	Surface	1.1	21.8	21.8	8.3	8.3	32.6	32.6	90.6	91.4	6.8	6.8	6.8	2.8	2.8	3.3	4.7	4.6	5.7		
					21.8	8.3	8.3	32.6	32.6	92.1	91.4	6.9	6.8	2.8	2.8	4.4								
					21.8	8.3	8.3	32.7	32.7	91.4	91.4	6.8	6.8	3.2	3.2	4.8								
				Middle	4.1	21.8	21.8	8.3	8.3	32.7	32.7	91.4	91.4	6.8	6.8	6.8	6.8	3.2		3.2	5.0		4.9	
					Bottom	7.0	21.8	21.8	8.3	8.3	32.8	32.8	90.7	90.7	6.8	6.8	6.8	6.8		4.0	4.0		6.7	7.6
						21.8	8.3	8.3	32.8	32.8	90.7	90.7	6.8	6.8	4.1	4.0	8.4	7.6						
M4	Sunny	Moderate	13:13	Surface	1.0	21.8	21.8	8.3	8.3	32.6	32.6	96.2	96.2	7.2	7.2	7.1	1.9	1.9	2.1	5.2	5.7	4.9		
					21.8	8.3	8.3	32.6	32.6	96.2	96.2	7.2	7.2	1.9	1.9	6.2								
					21.8	8.3	8.3	32.6	32.6	95.1	95.1	7.1	7.1	2.3	2.3	4.9								
				Middle	5.0	21.8	21.8	8.3	8.3	32.6	32.6	95.1	95.1	7.1	7.1	7.1	7.1	2.3		2.3	4.7		4.8	
					Bottom	9.1	21.8	21.8	8.3	8.3	32.6	32.6	94.8	94.9	7.1	7.1	7.1	7.1		2.2	2.2		4.8	4.3
						21.8	8.3	8.3	32.6	32.6	94.9	94.9	7.1	7.1	2.3	2.2	3.8	4.3						
M5	Sunny	Moderate	14:04	Surface	1.0	21.9	21.9	8.3	8.3	32.3	32.3	96.6	95.8	7.2	7.2	7.1	1.9	1.9	2.0	6.6	6.2	4.9		
					21.9	8.3	8.3	32.3	32.3	95.0	95.8	7.1	7.2	1.9	1.9	5.8								
					21.8	8.3	8.3	32.4	32.4	93.7	93.8	7.0	7.0	2.0	2.0	4.8								
				Middle	6.1	21.9	21.9	8.3	8.3	32.4	32.4	93.9	93.8	7.0	7.0	7.0	7.0	2.0		2.0	3.6		4.2	
					Bottom	11.1	21.8	21.8	8.3	8.3	32.4	32.4	92.8	92.7	6.9	6.9	6.9	6.9		2.1	2.1		4.1	4.2
						21.8	8.3	8.3	32.4	32.4	92.6	92.7	6.9	6.9	2.1	2.1	4.2	4.2						
M6	Sunny	Moderate	13:57	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-	-	4.3			
					21.9	8.3	8.3	32.8	32.8	96.2	96.2	7.2	7.2	8.0	8.0	3.7								
					21.9	8.3	8.3	32.8	32.8	96.2	96.2	7.2	7.2	8.0	8.0	4.8								
				Middle	2.2	21.9	21.9	8.3	8.3	32.8	32.8	96.2	96.2	7.2	7.2	7.2	7.2		-	-		-	-	
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	-
						-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 6 December 2021 (Mid-Flood Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>CI: 2.4 NTU</u>	<u>CI: 2.6 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 8.6 mg/L</u>	<u>CI: 9.3 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 8.6 mg/L</u>	<u>CI: 9.3 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
	<u>CI: 6.2 mg/L</u>	<u>CI: 6.7 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 08 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average
C1	Sunny	Moderate	11:15	Surface	1.1	21.3	8.3	8.3	32.6	32.5	101.1	101.3	7.0	7.0	6.9	1.6	1.6	1.5	4.7	4.4	3.9
					21.3	8.3	8.3	32.5	101.4	7.0	1.7	4.1									
					21.1	21.2	8.3	8.3	32.6	32.6	100.3	6.9	6.9	1.2	1.2	1.2	3.5				
				Middle	9.1	21.2	8.3	8.3	32.6	32.6	100.4	6.9	6.9	1.2	1.2	1.5	4.3				
					Bottom	17.0	20.9	8.3	8.3	32.9	32.9	96.3	96.3	6.7	6.7	6.7	1.7	1.7	3.0		
						20.9	8.3	8.3	32.9	96.3	6.7	6.7	1.7	1.7	3.9	3.5					
C2	Sunny	Moderate	9:42	Surface	1.1	21.4	8.2	8.2	32.5	32.5	103.0	103.0	7.1	7.1	6.9	0.6	0.6	1.5	3.9	4.1	3.5
					21.4	8.2	8.2	32.5	103.0	7.1	7.1	0.6	0.6	4.2	4.1						
					20.9	20.9	8.2	8.2	32.8	32.8	97.5	6.7	6.7	1.2	1.2	1.5	3.6				
				Middle	16.0	20.9	8.2	8.2	32.8	32.8	97.7	6.8	6.7	1.2	1.2	1.5	3.4				
					Bottom	31.0	20.9	8.3	8.3	32.8	32.8	95.9	96.0	6.6	6.6	6.6	3.0				
						20.9	8.3	8.3	32.8	96.0	6.6	6.6	2.5	2.7	2.8	3.0					
G1	Sunny	Moderate	10:24	Surface	1.0	21.4	8.3	8.3	32.5	32.5	101.8	101.9	7.0	7.0	7.0	1.4	1.4	1.1	3.0	2.9	3.2
					21.4	8.3	8.3	32.5	102.0	7.0	7.0	1.4	1.4	2.8	2.9						
					4.1	21.3	8.3	8.3	32.6	32.6	101.9	7.0	7.0	0.9	1.0	1.1	3.5				
				Middle	7.0	21.3	8.3	8.3	32.6	32.6	101.9	7.0	7.0	1.0	1.0	1.1	3.2				
						21.3	8.3	8.3	32.6	32.6	101.7	7.0	7.0	0.9	0.9	3.1	3.4				
					21.3	8.3	8.3	32.6	32.6	101.7	7.0	7.0	0.9	0.9	3.6	3.4					
G2	Sunny	Moderate	10:03	Surface	1.1	21.4	8.3	8.3	32.5	32.5	102.4	102.4	7.0	7.0	7.0	1.8	1.8	1.2	3.9	3.6	3.1
					21.4	8.3	8.3	32.5	102.4	7.0	7.0	1.8	1.8	3.2	3.1						
					5.1	21.3	8.3	8.3	32.6	32.6	100.9	6.9	6.9	1.1	1.1	1.2	3.2				
				Middle	9.1	21.3	8.3	8.3	32.6	32.6	100.9	6.9	6.9	1.1	1.1	1.2	2.9				
						21.1	21.1	8.3	8.3	32.7	32.7	100.0	6.9	6.9	0.7	0.8	0.8	3.0			
					21.1	8.3	8.3	32.7	99.9	6.9	6.9	0.8	0.8	2.2	2.6						
G3	Sunny	Moderate	10:31	Surface	1.0	21.4	8.3	8.3	32.5	32.5	102.1	102.1	7.0	7.0	7.0	1.1	1.1	1.1	5.2	4.9	4.4
					21.4	8.3	8.3	32.5	102.1	7.0	7.0	1.2	1.1	4.5	4.9						
					4.1	21.3	8.3	8.3	32.6	32.6	101.8	7.0	7.0	0.9	0.9	1.1	4.8				
				Middle	7.0	21.3	8.3	8.3	32.6	32.6	101.9	7.0	7.0	0.9	0.9	1.1	4.5				
						21.3	8.3	8.3	32.6	32.6	101.5	7.0	7.0	1.2	1.2	3.4	3.6				
					21.3	8.3	8.3	32.6	32.6	101.5	7.0	7.0	1.2	1.2	3.8	3.6					
G4	Sunny	Moderate	10:46	Surface	1.1	21.4	8.3	8.3	32.5	32.5	102.3	102.3	7.0	7.0	7.0	1.3	1.3	1.0	4.2	4.0	3.7
					21.4	8.3	8.3	32.5	102.3	7.0	7.0	1.3	1.3	3.8	4.0						
					4.1	21.3	8.3	8.3	32.5	32.5	102.1	7.0	7.0	0.9	1.0	1.0	4.4				
				Middle	7.0	21.3	8.3	8.3	32.5	32.5	102.2	7.0	7.0	1.0	1.0	1.0	3.5				
						21.3	8.3	8.3	32.6	32.6	101.6	7.0	7.0	0.8	0.8	3.2	3.1				
					21.3	8.3	8.3	32.6	32.6	101.5	7.0	7.0	0.8	0.8	2.9	3.1					
M1	Sunny	Moderate	10:11	Surface	1.1	21.4	8.3	8.3	32.5	32.5	102.6	102.6	7.0	7.0	7.0	1.6	1.6	1.2	3.3	3.5	3.3
					21.4	8.3	8.3	32.5	102.6	7.0	7.0	1.6	1.6	3.7	3.5						
					3.1	21.4	8.3	8.3	32.5	32.5	102.5	7.0	7.0	1.5	1.5	1.2	3.5				
				Middle	5.1	21.4	8.3	8.3	32.5	32.5	102.5	7.0	7.0	1.5	1.5	1.2	2.9				
						21.3	21.3	8.3	8.3	32.6	32.6	101.9	7.0	7.0	0.7	0.6	0.6	2.9			
					21.3	8.3	8.3	32.6	32.6	101.9	7.0	7.0	0.6	0.6	3.3	3.1					
M2	Sunny	Moderate	9:56	Surface	1.1	21.4	8.3	8.3	32.5	32.5	102.5	102.5	7.0	7.0	7.0	1.6	1.5	1.6	4.2	4.0	3.5
					21.4	8.3	8.3	32.5	102.5	7.0	7.0	1.5	1.5	3.7	4.0						
					6.2	21.2	8.3	8.3	32.6	32.6	101.1	7.0	7.0	1.6	1.6	1.6	3.2				
				Middle	11.1	21.2	8.3	8.3	32.6	32.6	101.2	7.0	7.0	1.6	1.6	1.6	3.5				
						21.0	21.0	8.3	8.3	32.8	32.8	98.3	6.8	6.8	1.8	1.8	1.8	3.5			
					21.0	8.3	8.3	32.8	32.8	98.2	98.3	6.8	6.8	1.9	1.8	3.0	3.3				
M3	Sunny	Moderate	10:40	Surface	1.1	21.4	8.3	8.3	32.5	32.5	102.2	102.2	7.0	7.0	7.0	1.6	1.6	1.3	3.0	3.2	4.0
					21.4	8.3	8.3	32.5	102.2	7.0	7.0	1.6	1.6	3.4	3.2						
					4.1	21.4	8.3	8.3	32.5	32.5	102.2	7.0	7.0	1.4	1.4	1.3	3.6				
				Middle	7.1	21.4	8.3	8.3	32.5	32.5	102.3	7.0	7.0	1.4	1.4	1.3	4.2				
						21.3	21.3	8.3	8.3	32.6	32.6	101.5	7.0	7.0	1.0	1.0	1.0	4.6			
					21.3	8.3	8.3	32.6	32.6	101.5	7.0	7.0	1.0	1.0	5.0	4.8					
M4	Sunny	Moderate	9:49	Surface	1.1	21.4	8.3	8.3	32.5	32.5	102.4	102.4	7.0	7.0	7.0	1.6	1.6	1.5	4.2	4.5	4.1
					21.4	8.3	8.3	32.5	102.4	7.0	7.0	1.6	1.6	4.8	4.5						
					5.0	21.3	8.3	8.3	32.6	32.6	101.7	7.0	7.0	1.7	1.7	1.5	4.4				
				Middle	9.1	21.3	8.3	8.3	32.6	32.6	101.8	7.0	7.0	1.7	1.7	1.5	4.2				
						21.1	21.1	8.3	8.3	32.6	32.6	99.9	6.9	6.9	1.1	1.1	1.1	3.2			
					21.1	8.3	8.3	32.7	99.9	6.9	6.9	1.1	1.1	3.5	3.4						
M5	Sunny	Moderate	11:05	Surface	1.1	21.4	8.3	8.3	32.5	32.5	102.1	102.1	7.0	7.0	7.0	1.5	1.5	1.2	2.1	2.4	4.0
					21.4	8.3	8.3	32.5	102.1	7.0	7.0	1.5	1.5	2.7	2.4						
					6.1	21.3	8.3	8.3	32.6	32.6	101.6	7.0	7.0	1.0	1.0	1.2	4.3				
				Middle	11.0	21.3	8.3	8.3	32.6	32.6	101.6	7.0	7.0	1.0	1.0	1.2	4.9				
						21.1	21.1	8.3	8.3	32.7	32.7	99.1	6.8	6.8	1.1	1.1	1.1	4.7			
					21.1	8.3	8.3	32.7	99.0	6.8	6.8	1.1	1.1	5.1	4.9						
M6	Sunny	Moderate	10:54	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	
					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
					2.1	21.4	8.3	8.3	32.5	32.5	102.2	7.0	7.0	7.0	7.0	7.0	1.4	1.5	1.5		5.6
				Middle	2.1	21.4	8.3	8.3	32.5	32.5	102.2	7.0	7.0	7.0	7.0	1.5	1.5	1.5	4.9		
						-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
					Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 8 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 3.3 NTU</u>	<u>C2: 3.5 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 4.9 mg/L</u>	<u>C2: 5.3 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 4.9 mg/L</u>	<u>C2: 5.3 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C2: 3.5 mg/L</u>		<u>C2: 3.8 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 08 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	16:18	Surface	1.1	21.1	21.1	8.3	8.3	32.5	32.5	102.8	102.9	7.1	7.1	7.0	1.5	1.6	1.4	6.0	5.7	5.2
				Middle	9.1	21.0	21.0	8.3	8.3	32.6	32.6	102.9	101.7	7.1	7.0	7.0	1.6	1.1	1.4	5.4	5.1	
				Bottom	17.1	20.7	20.7	8.3	8.3	32.6	32.9	101.8	97.2	7.0	6.7	6.7	1.1	1.7	6.7	5.0	4.7	
C2	Sunny	Moderate	14:46	Surface	1.1	21.2	21.2	8.2	8.2	32.5	32.5	104.0	104.0	7.1	7.1	7.0	0.5	0.5	1.5	4.7	5.0	4.7
				Middle	16.0	20.7	20.7	8.2	8.2	32.8	32.8	104.0	99.0	7.1	6.8	6.8	0.5	1.0	6.8	5.3	5.0	
				Bottom	31.0	20.7	20.7	8.2	8.3	32.8	32.8	99.1	97.0	6.8	6.8	6.7	1.0	3.0	6.7	5.2	4.2	
G1	Sunny	Moderate	15:27	Surface	1.0	21.2	21.2	8.3	8.3	32.5	32.5	103.1	103.2	7.1	7.1	7.1	1.3	1.3	1.0	6.1	5.9	5.2
				Middle	4.0	21.1	21.1	8.3	8.3	32.6	32.6	103.2	103.0	7.1	7.1	7.1	1.2	1.0	1.0	5.7	5.0	
				Bottom	7.0	21.1	21.1	8.3	8.3	32.6	32.6	103.0	102.6	7.1	7.0	7.0	0.9	0.9	7.0	5.0	4.8	
G2	Sunny	Moderate	15:07	Surface	1.1	21.2	21.2	8.3	8.3	32.5	32.5	103.3	103.3	7.1	7.1	7.1	1.7	1.7	1.1	6.2	6.6	5.3
				Middle	5.0	21.1	21.1	8.3	8.3	32.6	32.6	102.2	102.2	7.1	7.0	7.0	1.7	0.9	7.1	7.0	5.4	
				Bottom	9.0	20.9	20.9	8.3	8.3	32.6	32.7	101.5	101.4	7.0	7.0	7.0	0.9	0.6	7.0	4.9	4.0	
G3	Sunny	Moderate	15:34	Surface	1.0	21.1	21.1	8.3	8.3	32.5	32.5	103.2	103.3	7.1	7.1	7.1	1.2	1.2	1.1	5.1	5.1	4.5
				Middle	4.1	21.1	21.1	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	7.1	1.2	0.9	7.1	4.9	4.5	
				Bottom	7.1	21.1	21.1	8.3	8.3	32.6	32.6	103.0	102.5	7.1	7.0	7.0	0.9	1.2	7.0	4.0	3.9	
G4	Sunny	Moderate	15:49	Surface	1.1	21.2	21.2	8.3	8.3	32.5	32.5	103.4	103.5	7.1	7.1	7.1	1.2	1.2	1.1	4.2	4.0	3.5
				Middle	4.0	21.1	21.1	8.3	8.3	32.5	32.5	103.5	103.3	7.1	7.1	7.1	1.2	0.9	7.1	3.7	3.4	
				Bottom	7.0	21.0	21.0	8.3	8.3	32.6	32.6	103.3	102.5	7.1	7.0	7.0	1.0	0.8	7.0	3.6	3.1	
M1	Sunny	Moderate	15:14	Surface	1.0	21.2	21.2	8.3	8.3	32.5	32.5	103.6	103.6	7.1	7.1	7.1	1.5	1.5	1.1	3.5	3.1	3.6
				Middle	2.9	21.2	21.2	8.3	8.3	32.5	32.5	103.6	103.5	7.1	7.1	7.1	1.5	1.3	7.1	2.7	3.9	
				Bottom	5.1	21.1	21.1	8.3	8.3	32.6	32.6	103.5	103.0	7.1	7.1	7.1	1.3	0.7	7.1	3.8	3.9	
M2	Sunny	Moderate	14:59	Surface	1.1	21.2	21.2	8.3	8.3	32.5	32.5	103.6	103.6	7.1	7.1	7.1	1.4	1.4	1.1	2.6	2.8	4.0
				Middle	6.1	21.0	21.0	8.3	8.3	32.6	32.6	103.6	102.4	7.1	7.0	7.0	1.4	1.5	7.1	3.0	4.5	
				Bottom	11.0	20.8	20.7	8.3	8.3	32.6	32.8	102.5	98.9	7.0	6.8	6.8	1.5	1.8	7.0	4.7	4.6	
M3	Sunny	Moderate	15:43	Surface	1.0	21.1	21.1	8.3	8.3	32.5	32.5	103.0	103.0	7.1	7.1	7.1	1.5	1.5	1.1	4.2	4.6	4.3
				Middle	4.1	21.1	21.1	8.3	8.3	32.5	32.5	103.0	103.1	7.1	7.1	7.1	1.5	1.3	7.1	5.0	4.5	
				Bottom	7.1	21.1	21.1	8.3	8.3	32.6	32.6	103.2	102.6	7.1	7.0	7.0	1.3	1.0	7.0	4.6	3.9	
M4	Sunny	Moderate	14:53	Surface	1.0	21.2	21.2	8.3	8.3	32.5	32.5	102.6	103.4	7.1	7.1	7.1	1.6	1.6	1.1	4.0	4.7	4.3
				Middle	5.0	21.0	21.0	8.3	8.3	32.6	32.6	102.6	102.4	7.1	7.0	7.0	1.6	1.4	7.1	3.8	4.2	
				Bottom	9.2	20.9	20.9	8.3	8.3	32.6	32.6	102.5	101.2	7.0	7.0	7.0	1.5	1.0	7.0	4.5	4.0	
M5	Sunny	Moderate	16:08	Surface	1.0	21.1	21.1	8.3	8.3	32.5	32.5	101.0	101.1	7.1	7.1	7.1	1.0	1.0	1.1	3.4	3.5	3.9
				Middle	6.0	21.1	21.1	8.3	8.3	32.6	32.6	103.2	102.7	7.1	7.1	7.1	1.0	0.9	7.1	3.3	3.9	
				Bottom	11.0	20.8	20.8	8.3	8.3	32.7	32.7	103.3	99.8	7.1	6.9	6.9	1.0	1.0	6.9	4.0	4.3	
M6	Sunny	Moderate	15:57	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	-	-	3.5
				Middle	2.1	21.1	21.1	8.3	8.3	32.5	32.5	103.1	103.1	7.1	7.1	7.1	8.0	8.0	7.1	3.6	3.5	
				Bottom	-	21.1	-	8.3	-	32.5	-	103.1	-	7.1	-	-	8.0	-	-	3.3	-	

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 8 December 2021 (Mid-Flood Tide)

<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C1: 2.0 NTU</u>	<u>C1: 2.2 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 6.8 mg/L</u>	<u>C1: 7.4 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 6.8 mg/L</u>	<u>C1: 7.4 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C1: 5.6 mg/L</u>		<u>C1: 6.0 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 10 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	8:06	Surface	1.0	21.7	21.7	8.3	8.3	33.5	33.5	96.2	96.1	7.0	7.0	7.0	0.8	0.8	2.3	3.4	3.0	2.9
					9.1	21.5	21.5	8.3	8.3	33.6	33.6	95.7	95.7	7.0	7.0	0.9	1.1	1.1	2.6	2.9		
					17.0	21.3	21.3	8.3	8.3	33.7	33.7	97.7	97.6	7.1	7.1	5.0	5.0	5.0	2.6	2.8		
C2	Sunny	Calm	7:13	Surface	1.0	21.7	21.6	8.1	8.2	33.5	33.5	100.9	97.7	7.3	7.1	7.0	1.2	1.2	2.4	5.3	5.1	3.9
					16.1	21.5	21.5	8.3	8.3	33.5	33.5	94.3	94.0	6.9	6.8	6.8	1.2	1.9	1.9	4.8	3.8	
					31.1	21.5	21.5	8.3	8.3	33.5	33.5	93.7	94.0	6.8	6.8	6.8	1.9	4.1	4.1	4.3	2.9	
G1	Sunny	Calm	7:45	Surface	1.0	21.8	21.8	8.3	8.3	33.4	33.4	95.8	95.8	6.9	6.9	6.9	0.9	0.9	1.3	3.0	3.1	2.9
					3.9	21.7	21.7	8.3	8.3	33.6	33.6	95.6	95.7	6.9	6.9	6.9	1.2	1.1	1.2	3.0	2.9	
					7.0	21.5	21.5	8.3	8.3	33.7	33.7	95.9	95.9	7.0	7.0	7.0	2.0	1.9	1.9	2.1	2.6	
G2	Sunny	Calm	7:37	Surface	1.0	21.7	21.7	8.3	8.3	33.5	33.5	98.9	97.8	7.2	7.1	7.0	1.0	1.0	1.4	3.2	2.9	2.7
					5.0	21.6	21.6	8.3	8.3	33.6	33.6	96.9	96.7	7.0	7.0	7.0	1.3	1.3	1.3	2.7	2.9	
					9.1	21.5	21.5	8.3	8.3	33.7	33.7	96.2	95.9	7.0	7.0	7.0	1.9	1.9	1.9	2.5	2.4	
G3	Sunny	Calm	7:49	Surface	1.1	21.7	21.8	8.3	8.3	33.6	33.6	96.4	96.1	7.0	6.9	6.9	1.9	1.9	2.0	2.9	3.2	2.7
					4.1	21.7	21.8	8.3	8.3	33.6	33.6	95.8	95.7	6.9	6.9	6.9	1.9	1.9	1.9	3.4	2.6	
					7.0	21.6	21.6	8.3	8.3	33.7	33.7	95.2	94.9	6.9	6.9	6.9	2.2	2.2	2.2	2.4	2.5	
G4	Sunny	Calm	7:55	Surface	1.0	21.7	21.7	8.3	8.3	33.6	33.6	98.3	97.3	7.1	7.0	7.0	1.2	1.3	1.4	3.0	2.8	2.6
					4.1	21.6	21.7	8.3	8.3	33.6	33.6	96.7	96.3	7.0	7.0	7.0	1.2	1.4	1.3	3.0	2.8	
					7.1	21.5	21.5	8.3	8.3	33.7	33.7	96.6	96.0	7.0	7.0	7.0	1.8	1.8	1.8	2.0	2.2	
M1	Sunny	Calm	7:42	Surface	1.1	21.7	21.7	8.3	8.3	33.3	33.4	94.2	94.5	6.8	6.8	6.9	1.3	1.2	1.7	2.8	3.1	2.7
					3.1	21.6	21.6	8.3	8.3	33.6	33.6	95.1	94.9	6.9	6.9	6.9	1.6	1.6	1.6	2.8	2.6	
					5.0	21.6	21.6	8.3	8.3	33.7	33.7	94.9	94.6	6.9	6.9	6.9	2.1	2.2	2.2	2.4	2.4	
M2	Sunny	Calm	7:32	Surface	1.0	21.7	21.7	8.3	8.3	33.5	33.5	99.0	97.7	7.2	7.1	7.0	1.2	1.1	1.7	2.6	2.2	2.3
					6.1	21.5	21.5	8.3	8.3	33.6	33.6	96.3	96.2	7.0	7.0	7.0	1.5	1.5	1.5	2.6	2.3	
					11.0	21.5	21.5	8.3	8.3	33.7	33.7	96.0	94.9	6.9	6.9	6.9	2.4	2.4	2.4	3.0	2.6	
M3	Sunny	Calm	7:52	Surface	1.1	21.9	21.9	8.3	8.3	33.6	33.6	97.4	96.5	7.0	7.0	6.9	1.3	1.3	1.6	2.7	3.1	2.7
					4.1	21.8	21.8	8.3	8.3	33.6	33.6	95.0	95.7	6.9	6.9	6.9	1.3	1.4	1.4	3.5	2.9	
					7.0	21.6	21.6	8.3	8.3	33.7	33.7	95.3	95.0	6.9	6.9	6.9	1.4	2.0	2.0	2.5	2.0	
M4	Sunny	Calm	7:26	Surface	1.1	21.6	21.6	8.3	8.3	33.6	33.6	96.9	96.6	7.0	7.0	7.0	1.1	1.0	1.5	2.8	2.7	2.5
					5.0	21.7	21.6	8.3	8.3	33.6	33.6	96.3	96.0	7.0	7.0	7.0	1.0	1.1	1.1	2.5	2.5	
					9.0	21.5	21.5	8.3	8.3	33.6	33.6	96.2	96.0	7.0	7.0	7.0	2.4	2.4	2.4	2.4	2.4	
M5	Sunny	Calm	8:02	Surface	1.0	21.8	21.8	8.3	8.3	33.5	33.5	98.1	96.6	7.1	7.0	6.9	0.7	0.8	1.0	1.5	1.8	2.5
					6.0	21.6	21.6	8.3	8.3	33.5	33.5	95.1	94.0	6.8	6.8	6.8	0.8	1.0	1.0	2.1	2.6	
					11.1	21.6	21.6	8.3	8.3	33.5	33.5	93.9	93.7	6.8	6.8	6.8	1.0	1.1	1.1	2.7	3.0	
M6	Sunny	Calm	7:58	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	
					2.1	21.7	21.7	8.3	8.3	33.6	33.6	98.2	97.7	7.1	7.1	7.1	8.0	8.0	1.2	3.2		3.5
					-	21.7	-	8.3	-	33.6	-	97.2	-	7.0	-	-	8.0	-	-	-		3.8

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 10 December 2021 (Mid-Flood Tide)

<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>CI: 6.0 NTU</u>	<u>CI: 6.5 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 3.6 mg/L</u>	<u>CI: 3.9 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 3.6 mg/L</u>	<u>CI: 3.9 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>CI: 3.4 mg/L</u>		<u>CI: 3.6 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 13 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average
C1	Sunny	Calm	9:20	Surface	1.1	22.0	8.2	8.2	34.2	34.1	97.6	97.6	6.6	6.6	6.6	1.6	1.6	2.4	2.6	2.2	2.6
					22.0	8.2	8.2	34.1	34.1	97.6	97.6	6.6	6.6	1.6	1.6						
					21.6	8.2	8.2	34.7	34.7	95.2	95.2	6.5	6.5	2.2	2.2						
				Middle	9.0	21.6	8.2	8.2	34.7	34.7	95.2	95.2	6.5	6.5	6.6	6.6	2.2		2.2		
					21.6	8.2	8.2	34.7	34.7	95.2	95.2	6.5	6.5	2.2	2.2						
					21.1	8.3	8.3	35.4	35.4	90.6	90.6	6.2	6.2	3.3	3.4						
Bottom	17.0	21.1	8.3	8.3	35.4	35.4	90.6	90.6	6.2	6.2	6.2	6.2	3.3	3.4							
	22.1	8.3	8.3	33.9	33.9	96.4	96.4	6.6	6.6	1.2	1.2										
	22.1	8.3	8.3	33.9	33.9	96.4	96.4	6.6	6.6	1.2	1.2										
C2	Sunny	Calm	8:00	Surface	1.0	22.1	8.3	8.3	33.9	33.9	96.4	96.4	6.6	6.6	6.4	1.2	1.2	2.0	1.8	1.9	2.2
					22.1	8.3	8.3	33.9	33.9	96.4	96.4	6.6	6.6	1.2	1.2						
					21.4	8.2	8.2	34.9	34.9	92.2	92.2	6.3	6.3	2.3	2.3						
				Middle	16.0	21.4	8.2	8.2	34.9	34.9	92.2	92.2	6.3	6.3	6.4	6.4	2.3		2.3		
					21.4	8.2	8.2	34.9	34.9	92.2	92.2	6.3	6.3	2.4	2.3						
					21.3	8.2	8.2	35.1	35.1	91.6	91.6	6.3	6.3	2.6	2.6						
Bottom	31.0	21.3	8.2	8.2	35.1	35.1	91.6	91.6	6.3	6.3	6.3	6.3	2.6	2.6							
	21.3	8.2	8.2	35.1	35.1	91.5	91.5	6.3	6.3	2.6	2.6										
	21.3	8.2	8.2	35.1	35.1	91.5	91.5	6.3	6.3	2.6	2.6										
G1	Sunny	Calm	8:32	Surface	1.1	22.2	8.4	8.4	34.1	34.1	99.9	100.0	6.8	6.8	6.8	0.8	0.8	0.7	1.6	2.2	2.5
					22.2	8.4	8.4	34.1	34.1	100.1	100.1	6.8	6.8	0.8	0.8						
					22.2	8.4	8.4	34.3	34.3	100.0	100.1	6.8	6.8	0.2	0.2						
				Middle	4.1	22.2	8.4	8.4	34.3	34.3	100.0	100.1	6.8	6.8	6.8	6.8	0.2		0.2		
					22.2	8.4	8.4	34.3	34.3	100.0	100.1	6.8	6.8	0.2	0.2						
					21.7	8.4	8.4	34.6	34.6	98.2	98.1	6.7	6.7	1.0	1.0						
Bottom	7.0	21.7	8.4	8.4	34.7	34.6	98.0	98.1	6.7	6.7	6.7	6.7	1.0	1.0							
	21.7	8.4	8.4	34.7	34.6	98.0	98.1	6.7	6.7	1.0	1.0										
	21.9	8.2	8.2	34.3	34.3	98.7	98.8	6.7	6.7	1.6	1.7										
G2	Sunny	Calm	8:17	Surface	1.0	21.9	8.2	8.2	34.3	34.3	99.0	99.0	6.7	6.7	6.7	1.6	1.7	1.8	2.2	2.6	2.7
					22.0	8.2	8.2	34.3	34.3	99.0	99.0	6.7	6.7	1.6	1.6						
					21.9	8.2	8.2	34.3	34.3	99.0	99.0	6.7	6.7	1.6	1.6						
				Middle	5.0	21.9	8.2	8.2	34.3	34.3	99.0	99.0	6.7	6.7	6.7	6.7	1.6		1.6		
					21.9	8.2	8.2	34.3	34.3	99.0	99.0	6.7	6.7	1.6	1.6						
					21.3	8.3	8.3	35.2	35.2	95.3	95.3	6.5	6.5	2.1	2.1						
Bottom	9.0	21.3	8.3	8.3	35.2	35.2	95.3	95.3	6.5	6.5	6.5	6.5	2.1	2.1							
	21.3	8.3	8.3	35.2	35.2	95.3	95.3	6.5	6.5	2.1	2.1										
	21.3	8.3	8.3	35.2	35.2	95.3	95.3	6.5	6.5	2.1	2.1										
G3	Sunny	Calm	8:37	Surface	1.0	22.5	8.0	8.0	34.0	34.0	100.5	100.6	6.8	6.8	6.8	1.6	1.6	1.6	2.9	2.6	2.3
					22.5	8.0	8.0	34.0	34.0	100.6	100.6	6.8	6.8	1.5	1.6						
					21.9	8.1	8.1	34.5	34.5	99.1	99.0	6.7	6.7	1.5	1.5						
				Middle	4.0	21.8	8.1	8.1	34.6	34.5	98.9	99.0	6.7	6.7	6.8	6.8	1.5		1.5		
					21.8	8.1	8.1	34.6	34.5	98.9	99.0	6.7	6.7	1.5	1.5						
					21.5	8.1	8.1	34.9	35.0	96.5	96.2	6.6	6.6	1.8	1.8						
Bottom	7.0	21.4	8.1	8.1	35.0	35.0	95.9	96.2	6.6	6.6	6.6	6.6	1.8	1.8							
	21.4	8.1	8.1	35.0	35.0	95.9	96.2	6.6	6.6	1.8	1.8										
	21.4	8.1	8.1	35.0	35.0	95.9	96.2	6.6	6.6	1.8	1.8										
G4	Sunny	Calm	8:52	Surface	1.1	22.5	8.2	8.2	34.0	34.0	102.1	102.2	6.9	6.9	6.8	0.9	0.9	1.3	2.0	2.4	2.8
					22.5	8.2	8.2	34.0	34.0	102.2	102.2	6.9	6.9	0.9	0.9						
					21.8	8.2	8.2	34.5	34.5	99.8	99.9	6.8	6.8	1.9	1.9						
				Middle	4.0	21.8	8.2	8.2	34.5	34.5	99.9	99.9	6.8	6.8	6.8	6.8	1.9		1.9		
					21.8	8.2	8.2	34.5	34.5	99.9	99.9	6.8	6.8	1.9	1.9						
					21.3	8.3	8.3	35.1	35.1	95.8	95.8	6.6	6.5	1.2	1.2						
Bottom	7.0	21.3	8.3	8.3	35.1	35.1	95.8	95.8	6.6	6.5	6.5	6.5	1.2	1.2							
	21.3	8.3	8.3	35.2	35.2	95.7	95.8	6.5	6.5	1.2	1.2										
	22.8	8.1	8.1	33.9	33.9	99.0	99.0	6.6	6.6	1.5	1.4										
M1	Sunny	Calm	8:23	Surface	1.0	22.8	8.1	8.1	33.9	33.9	99.0	99.0	6.6	6.6	6.7	1.5	1.4	1.5	2.3	2.1	2.5
					22.8	8.1	8.1	33.9	33.9	99.0	99.0	6.6	6.6	1.4	1.4						
					22.4	8.1	8.1	34.1	34.1	98.8	98.9	6.7	6.7	1.4	1.4						
				Middle	3.1	22.4	8.1	8.1	34.1	34.1	98.9	98.9	6.7	6.7	6.7	6.7	1.4		1.4		
					22.4	8.1	8.1	34.1	34.1	98.9	98.9	6.7	6.7	1.4	1.4						
					22.1	8.1	8.1	34.3	34.3	98.8	98.9	6.7	6.7	1.6	1.6						
Bottom	5.0	22.1	8.1	8.1	34.3	34.3	98.8	98.9	6.7	6.7	6.7	6.7	1.6	1.6							
	22.1	8.1	8.1	34.3	34.3	98.9	98.9	6.7	6.7	1.6	1.6										
	21.8	8.2	8.2	34.5	34.5	97.2	97.2	6.6	6.6	1.6	1.6										
M2	Sunny	Calm	8:09	Surface	1.0	21.8	8.2	8.2	34.5	34.5	97.2	97.2	6.6	6.6	6.6	1.6	1.6	1.7	2.3	2.3	2.5
					21.8	8.2	8.2	34.5	34.5	97.1	97.2	6.6	6.6	1.6	1.6						
					21.7	8.2	8.2	34.5	34.5	96.8	96.9	6.6	6.6	2.0	2.0						
				Middle	6.1	21.7	8.2	8.2	34.5	34.5	96.9	96.9	6.6	6.6	6.6	6.6	1.9		2.0		
					21.7	8.2	8.2	34.5	34.5	96.9	96.9	6.6	6.6	1.9	2.0						
					21.5	8.2	8.2	34.8	34.8	96.4	96.4	6.6	6.6	1.6	1.6						
Bottom	11.0	21.5	8.2	8.2	34.8	34.8	96.4	96.4	6.6	6.6	6.6	6.6	1.6	1.6							
	21.5	8.2	8.2	34.8	34.8	96.4	96.4	6.6	6.6	1.6	1.6										
	21.5	8.2	8.2	34.8	34.8	96.4	96.4	6.6	6.6	1.6	1.6										
M3	Sunny	Calm	8:44	Surface	1.0	22.4	8.2	8.2	34.1	34.2	99.2	99.3	6.7	6.7	6.6	1.9	2.0	1.7	2.9	3.3	2.8
					22.3	8.2	8.2	34.2	34.2	99.3	99.3	6.7	6.7	2.0	2.0						
					21.6	8.2	8.2	34.8	34.8	96.0	96.0	6.5	6.5	1.8	1.8						
				Middle	4.1	21.6	8.2	8.2	34.8	34.8	95.9	96.0	6.5	6.5	6.6	6.6	1.8		1.8		
					21.6	8.2	8.2	34.8	34.8	95.9	96.0	6.5	6.5	1.8	1.8						
					21.3	8.2	8.2	35.1	35.1	94.0	93.9	6.4	6.4	1.3	1.3						
Bottom	7.1	21.3	8.2	8.2	35.1	35.1	93.8	93.9	6.4	6.4	6.4	6.4	1.3	1.3							
	21.3	8.2	8.2	35.1	35.1	93.8	93.9	6.4	6.4	1.3	1.3										
	21.3	8.2	8.2	35.1	35.1	93.8	93.9	6.4	6.4	1.3	1.3										
M4	Sunny	Calm	8:08	Surface	1.1	21.6	8.3	8.3	34.7	34.7	93.5	93.6	6.4	6.4	6.3	2.2	2.2	2.9	3.4	3.1	2.8
					21.6	8.3	8.3	34.6	34.7	93.7	93.6	6.4	6.4	2.2	2.2						
					21.2	8.2	8.2	35.2	35.2	91.6	91.6	6.3	6.3	3.0	3.0						
				Middle	5.0	21.2	8.2	8.2	35.2	35.2	91.6	91.6	6.3	6.3	6.3	6.3	3.0		3.0		
					21.2	8.2	8.2	35.2	35.2	91.6	91.6	6.3	6.3	3.0	3.0						
					21.2	8.2	8.2	35.3	35.3	91.3	91.3	6.3	6.3	3.3	3.3						
Bottom	9.0	21.2	8.2	8.2	35.3	35.3	91.3	91.3	6.3	6.3	6.3	6.3	3.3	3.3							
	21.2	8.2	8.2	35.3	35.3	91.3	91.3	6.3	6.3	3.3	3.3										
	21.2	8.2	8.2	35.3	35.3	91.3	91.3	6.3	6.3	3.3	3.3										
M5																					

Action and Limit Levels for Marine Water Quality on 13 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 3.1 NTU</u>	<u>C2: 3.4 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 2.2 mg/L</u>	<u>C2: 2.4 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 2.2 mg/L</u>	<u>C2: 2.4 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C2: 3.1 mg/L</u>		<u>C2: 3.4 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 13 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)													
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*									
C1	Sunny	Calm	15:39	Surface	1.0	22.0	22.0	8.2	8.2	34.1	34.1	97.6	97.7	6.6	6.6	6.6	1.6	1.6	2.4	2.7	2.9	2.6											
					22.0	8.2	8.2	34.1	34.1	97.7	6.6	6.6	1.6	1.6	3.0		2.9																
				Middle	9.0	21.6	21.6	8.2	8.2	34.7	34.7	95.2	95.2	6.5	6.5		6.2	2.2		2.2	2.1		2.3	2.6									
					21.6	8.2	8.2	34.7	34.7	95.2	6.5	6.5	2.2	2.2	2.5			2.3															
				Bottom	17.1	21.1	21.1	8.3	8.3	35.4	35.4	90.5	90.5	6.2	6.2			6.3		3.5			3.5		2.1	2.7	3.7						
					21.1	8.3	8.3	35.5	35.5	90.5	6.2	6.2	3.5	3.5	2.4					2.7													
C2	Sunny	Calm	14:14	Surface	1.0	22.1	22.1	8.3	8.3	33.9	33.8	96.5	96.5	6.6	6.6	6.4			1.1	1.1		2.1	2.1			2.7		2.6					
					22.1	8.3	8.3	33.8	33.8	96.5	6.6	6.6	1.1	1.1	3.3				2.7														
				Middle	16.0	21.4	21.4	8.2	8.2	34.9	35.0	92.0	92.0	6.3	6.3		6.3		2.4	2.4	0.8		1.7	1.9		2.9							
					21.4	8.2	8.2	35.0	35.0	92.0	6.3	6.3	2.4	2.4	2.1				1.9														
				Bottom	31.0	21.3	21.3	8.2	8.2	35.2	35.2	91.4	91.4	6.3	6.3			6.3	2.8	2.8			0.8	2.8	3.3		2.9						
					21.3	8.2	8.2	35.2	35.2	91.4	6.3	6.3	2.8	2.8	3.8				3.3														
G1	Sunny	Calm	14:47	Surface	1.0	22.2	22.2	8.4	8.4	34.1	34.1	100.4	100.4	6.8	6.8	6.8			0.8	0.8		0.8		3.8	4.0			2.9					
					22.2	8.4	8.4	34.1	34.1	100.4	6.8	6.8	0.8	0.8	4.2				4.0														
				Middle	4.1	22.2	22.2	8.4	8.4	34.3	34.3	100.1	100.1	6.8	6.8		6.7		0.3	0.3	1.8			1.6	2.0	2.9							
					22.2	8.4	8.4	34.3	34.3	100.1	6.8	6.8	0.3	0.3	2.4				2.0														
				Bottom	7.0	21.7	21.7	8.4	8.4	34.7	34.7	97.9	97.9	6.7	6.7			6.7	1.3	1.4			1.8	2.2	2.8		2.9						
					21.7	8.4	8.4	34.7	34.7	97.9	6.7	6.7	1.4	1.4	3.4				2.8														
G2	Sunny	Calm	14:32	Surface	1.0	22.0	22.0	8.2	8.2	34.3	34.3	98.9	98.9	6.7	6.7	6.7			1.7	1.8		1.8		3.2	2.5			2.5					
					22.0	8.2	8.2	34.3	34.3	98.9	6.7	6.7	1.7	1.8	1.7				2.5														
				Middle	5.0	21.9	21.9	8.2	8.2	34.3	34.3	99.1	99.1	6.7	6.7		6.5		1.6	1.6	1.4			3.0	2.6	2.9							
					21.9	8.2	8.2	34.3	34.3	99.1	6.7	6.7	1.6	1.6	2.1				2.6														
				Bottom	9.0	21.3	21.3	8.3	8.3	35.2	35.2	95.2	95.2	6.5	6.5			6.5	2.1	2.1			1.4	3.1	2.6		2.9						
					21.3	8.3	8.3	35.2	35.2	95.2	6.5	6.5	2.1	2.1	2.1				2.6														
G3	Sunny	Calm	14:55	Surface	1.1	22.5	22.5	8.0	8.0	34.0	34.0	100.7	100.8	6.8	6.8	6.8			1.5	1.5		1.8		3.0	2.6			2.9					
					22.4	8.0	8.0	34.0	34.0	100.9	6.8	6.8	1.5	1.5	2.2				2.6														
				Middle	4.1	21.8	21.8	8.1	8.1	34.6	34.6	98.7	98.7	6.7	6.7		6.5		1.6	1.5	1.4			3.0	2.6	2.9							
					21.8	8.1	8.1	34.6	34.6	98.6	6.7	6.7	1.5	1.5	2.2				2.6														
				Bottom	7.1	21.3	21.3	8.1	8.1	35.1	35.1	95.4	95.4	6.5	6.5			6.5	1.1	1.1			1.4	3.0	3.4		2.9						
					21.3	8.1	8.1	35.1	35.1	95.2	6.5	6.5	1.1	1.1	3.7				3.4														
G4	Sunny	Calm	15:15	Surface	1.0	22.5	22.5	8.2	8.2	34.0	34.0	102.2	102.2	6.9	6.9	6.8			0.9	0.9		1.3		3.2	2.7			2.4					
					22.5	8.2	8.2	34.0	34.0	102.2	6.9	6.9	0.9	0.9	2.1				2.7														
				Middle	4.0	21.8	21.8	8.2	8.2	34.5	34.5	99.9	99.9	6.8	6.8		6.5		1.9	1.9	1.3			2.1	2.3	2.4							
					21.8	8.2	8.2	34.5	34.5	99.9	6.8	6.8	1.9	1.9	2.5				2.3														
				Bottom	7.1	21.3	21.3	8.3	8.3	35.1	35.1	95.6	95.6	6.5	6.5			6.5	1.0	1.0			1.3	2.4	2.4		2.4						
					21.3	8.3	8.3	35.1	35.1	95.6	6.5	6.5	1.0	1.0	2.3				2.4														
M1	Sunny	Calm	14:40	Surface	1.0	22.8	22.8	8.1	8.1	33.9	33.9	98.9	98.9	6.6	6.6	6.7			1.4	1.4		1.5		2.1	2.0			2.0					
					22.8	8.1	8.1	33.9	33.9	98.9	6.6	6.6	1.4	1.4	1.8				2.0														
				Middle	3.0	22.4	22.4	8.1	8.1	34.1	34.1	98.9	98.9	6.7	6.7		6.7		1.5	1.4	1.5			2.5	2.0	2.0							
					22.4	8.1	8.1	34.1	34.1	98.9	6.7	6.7	1.4	1.4	1.5				2.0														
				Bottom	5.1	22.2	22.2	8.1	8.1	34.3	34.3	98.9	98.9	6.7	6.7			6.7	1.6	1.6			1.5	2.2	2.0		2.0						
					22.2	8.1	8.1	34.3	34.3	98.8	6.7	6.7	1.6	1.6	1.8				2.0														
M2	Sunny	Calm	14:25	Surface	1.1	21.8	21.8	8.2	8.2	34.5	34.5	97.0	97.0	6.6	6.6	6.6			1.5	1.5		1.7		2.8	2.6			2.4					
					21.8	8.2	8.2	34.5	34.5	96.9	6.6	6.6	1.5	1.5	2.4				2.6														
				Middle	6.1	21.7	21.7	8.2	8.2	34.5	34.5	96.9	96.9	6.6	6.6		6.6		2.0	2.1	1.7			1.9	2.5	2.4							
					21.7	8.2	8.2	34.5	34.5	96.9	6.6	6.6	2.0	2.1	3.0				2.5														
				Bottom	11.0	21.5	21.5	8.2	8.2	34.8	34.8	96.3	96.3	6.6	6.6			6.6	1.6	1.6			1.7	2.0	2.3		2.4						
					21.5	8.2	8.2	34.8	34.8	96.3	6.6	6.6	1.6	1.6	2.5				2.3														
M3	Sunny	Calm	15:08	Surface	1.0	22.3	22.3	8.2	8.2	34.3	34.3	99.4	99.5	6.7	6.7	6.6			2.0	2.0		1.7		2.0	1.9			2.1					
					22.2	8.2	8.2	34.3	34.3	99.5	6.7	6.7	2.0	2.0	1.7				1.9														
				Middle	4.0	21.6	21.6	8.2	8.2	34.8	34.8	95.9	95.9	6.5	6.5		6.4		1.8	1.8	1.1			2.1	2.3	2.1							
					21.6	8.2	8.2	34.8	34.8	95.9	6.5	6.5	1.8	1.8	2.4				2.3														
				Bottom	7.0	21.3	21.3	8.2	8.2	35.1	35.1	93.4	93.4	6.4	6.4			6.4	1.3	1.2			1.1	2.6	2.3		2.1						
					21.3	8.2	8.2	35.1	35.1	93.4	6.4	6.4	1.2	1.2	2.0				2.3														
M4	Sunny	Calm	14:21	Surface	1.0	21.6	21.6	8.3	8.3	34.6	34.6	93.8	93.9	6.4	6.4	6.3			2.1	2.1		2.8		2.5	2.4			2.8					
					21.6	8.3	8.3	34.6	34.6	93.9	6.4	6.4	2.1	2.1	2.2				2.4														
				Middle	5.0	21.2	21.2	8.2	8.2	35.2	35.2	91.6	91.6	6.3	6.3		6.3		2.9	2.9	1.1			2.7	2.7	2.8							
					21.2	8.2	8.2	35.2	35.2	91.6	6.3	6.3	2.9	2.9	2.6				2.7														
				Bottom	9.0	21.2	21.2	8.2	8.2	35.3	35.3	91.3	91.3	6.3	6.3			6.3	3.3	3.3			1.1	4.0	3.5		2.8						
					21.2	8.2	8.2	35.3	35.3	91.3	6.3	6.3	3.3	3.3	2.9				3.5														
M5	Sunny	Calm	15:28	Surface	1.0	23.1	23.1	8.2	8.2	33.4	33.4	109.4	109.9	7.3	7.4	7.1			1.2	1.2		1.1		2.8	2.5			3.4					
					23.1	8.2	8.2	33.4	33.4	110.3	7.4	7.4	1.2	1.2	2.2				2.5														
				Middle	6.1	22.1	22.1	8.2	8.2	34.0	34.0	100.4	100.3	6.8	6.8		6.7		1.3	1.3	1.1			3.3	3.2	3.4							
					22.1	8.2	8.2	34.1	34.0	100.2	6.8	6.8	1.3	1.3	3.1				3.2														
				Bottom	11.0	21.8	21.8	8.2	8.2	34.3	34.3	98.4	98.4	6.7	6.7			6.7	0.7	0.7			1.1	5.1	4.6		3.4						
					21.8	8.2	8.2	34.3	34.3	98.4	6.7	6.7	0.7	0.7	4.0				4.6														
M6	Sunny	Calm	15:22	Surface	-	-	-	-	-	-	-	-	-	-	6.8	-			-	1.5		-		-	3.7								
					2.1	22.2	22.2	8.2	8.3	34.1	34.1	100.2	100.1	6.8		6.8			6.8			8.0		8.0				1.5	3.2	3.7	3.7		
				Middle	2.1	22.2	22.2	8.3	8.3	34.1	34.1	100.0	100.0	6.8		6.8	6.8				8.0	8.0		1.5		4.1			-	3.7			
					-	-	-	-	-	-	-	-	-	-		-					-	-				-			-				
				Bottom	-	-	-	-	-	-	-	-	-	-		-		-			-	6.8	-			-	1.5		-			-	3.7
					-	-	-	-	-	-	-	-	-	-		-		-			-		-			-							

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

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Action and Limit Levels for Marine Water Quality on 13 December 2021 (Mid-Flood Tide)

<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>CI: 4.2 NTU</u>	<u>CI: 4.5 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 3.4 mg/L</u>	<u>CI: 3.7 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 3.4 mg/L</u>	<u>CI: 3.7 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>CI: 3.2 mg/L</u>		<u>CI: 3.5 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 15 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Sunny	Moderate	10:29	Surface	1.0	21.0	21.0	8.3	8.3	33.0	33.0	97.5	97.6	7.2	7.2	7.2	2.1	2.0	2.1	2.6	2.8	3.4	
					21.0	8.3	33.0	97.6	7.2	2.0	2.9												
				Middle	8.5	21.0	21.0	8.3	8.3	33.0	33.0	97.3	97.4	7.2	7.2	7.2	2.1	2.1	2.1	3.1	3.6		
					21.0	8.3	33.0	97.4	7.2	2.1	3.7												
				Bottom	16.1	21.1	21.1	8.3	8.3	33.0	33.0	96.9	96.9	7.1	7.1	7.1	2.3	2.2	2.2	4.2	4.0		
					21.1	8.3	33.0	96.9	7.1	7.1	7.1	2.2	2.2	2.2	4.2	4.0							
C2	Sunny	Moderate	9:02	Surface	1.1	21.0	21.0	8.3	8.3	33.0	33.0	98.1	98.1	7.2	7.2	7.2	2.3	2.3	2.3	3.4	3.2	2.8	
					21.0	8.3	33.0	98.1	7.2	2.4	3.0												
				Middle	16.0	21.0	21.0	8.1	8.1	33.0	33.0	97.0	97.1	7.1	7.1	7.1	2.5	2.5	2.5	2.5	2.7		
					21.0	8.1	33.0	97.1	7.1	7.1	7.1	2.5	2.5	2.5	2.8	2.7							
				Bottom	31.0	21.0	21.0	8.2	8.2	33.0	33.0	96.7	96.7	7.1	7.1	7.1	2.5	2.5	2.5	2.2	2.5		
					21.0	8.2	33.0	96.7	7.1	7.1	7.1	2.4	2.5	2.5	2.7	2.5							
G1	Sunny	Moderate	9:40	Surface	1.0	21.0	21.0	8.4	8.4	33.0	33.0	97.7	97.7	7.2	7.2	7.2	2.3	2.3	2.3	3.4	3.8	3.2	
					21.0	8.4	33.0	97.7	7.2	2.3	4.1												
				Middle	3.7	21.1	21.1	8.4	8.4	33.0	33.0	97.6	97.6	7.2	7.2	7.2	2.2	2.2	2.2	3.1	3.0		
					21.1	8.4	33.0	97.6	7.2	2.2	2.9												
				Bottom	6.6	21.0	21.0	8.4	8.4	33.0	33.0	97.2	97.2	7.1	7.1	7.1	2.1	2.1	2.1	2.7	2.7		
					21.0	8.4	33.0	97.2	7.1	7.1	7.1	2.1	2.1	2.1	2.7	2.7							
G2	Sunny	Moderate	9:22	Surface	1.1	21.0	21.0	8.4	8.4	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.3	2.3	2.3	2.0	2.4	2.8	
					21.0	8.4	33.0	97.5	7.2	2.3	2.8												
				Middle	5.0	21.0	21.0	8.4	8.4	33.0	33.0	97.3	97.4	7.2	7.2	7.2	2.3	2.3	2.3	2.6	2.9		
					21.0	8.4	33.0	97.4	7.2	2.3	3.2												
				Bottom	9.0	21.0	21.0	8.4	8.4	33.0	33.0	97.1	97.1	7.1	7.1	7.1	2.3	2.2	2.2	3.0	3.2		
					21.0	8.4	33.0	97.1	7.1	7.1	7.1	2.2	2.2	2.2	3.4	3.2							
G3	Sunny	Moderate	9:45	Surface	1.1	21.1	21.1	8.4	8.4	33.0	33.0	97.6	97.7	7.2	7.2	7.2	2.3	2.3	2.3	4.2	4.1	3.7	
					21.1	8.4	33.0	97.7	7.2	2.3	3.9												
				Middle	3.7	21.1	21.1	8.4	8.4	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.2	2.2	2.2	4.2	3.7		
					21.0	8.4	33.0	97.5	7.2	2.2	3.2												
				Bottom	6.6	21.0	21.0	8.4	8.4	33.0	33.0	97.2	97.2	7.1	7.1	7.1	2.1	2.1	2.1	3.0	3.4		
					21.0	8.4	33.0	97.2	7.1	7.1	7.1	2.1	2.1	2.1	3.8	3.4							
G4	Sunny	Moderate	9:59	Surface	1.0	21.0	21.0	8.3	8.3	33.0	33.0	97.4	97.4	7.2	7.2	7.1	2.1	2.1	2.1	3.9	3.7	3.2	
					21.0	8.3	33.0	97.4	7.2	2.1	3.5												
				Middle	3.7	21.1	21.1	8.3	8.3	33.0	33.0	97.1	97.1	7.1	7.1	7.1	2.1	2.1	2.1	3.0	3.2		
					21.1	8.3	33.0	97.1	7.1	7.1	7.1	2.1	2.1	2.1	3.4	3.2							
				Bottom	6.5	21.0	21.0	8.3	8.3	33.0	33.0	96.8	96.8	7.1	7.1	7.1	2.2	2.2	2.2	2.8	2.8		
					21.0	8.3	33.0	96.8	7.1	7.1	7.1	2.2	2.2	2.2	2.7	2.8							
M1	Sunny	Moderate	9:29	Surface	1.1	21.1	21.1	8.4	8.4	33.0	33.0	97.7	97.8	7.2	7.2	7.2	2.2	2.2	2.2	3.5	3.4	3.1	
					21.1	8.4	33.0	97.8	7.2	2.2	3.2												
				Middle	3.0	21.0	21.0	8.4	8.4	33.0	33.0	97.6	97.6	7.2	7.2	7.2	2.1	2.1	2.1	3.0	3.2		
					21.0	8.4	33.0	97.6	7.2	2.1	3.4												
				Bottom	5.1	21.0	21.0	8.4	8.4	33.0	33.0	97.4	97.4	7.2	7.2	7.2	2.3	2.3	2.3	2.7	2.9		
					21.0	8.4	33.0	97.4	7.2	2.3	3.0												
M2	Sunny	Moderate	9:16	Surface	1.1	21.0	21.0	8.3	8.3	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.4	2.3	2.3	4.0	3.8	3.2	
					21.0	8.3	33.0	97.5	7.2	2.3	3.5												
				Middle	5.3	21.0	21.0	8.3	8.3	33.0	33.0	97.3	97.3	7.1	7.1	7.1	2.5	2.5	2.5	2.9	3.1		
					21.0	8.3	33.0	97.3	7.1	7.1	7.1	2.5	2.5	2.5	3.3	3.1							
				Bottom	9.5	21.0	21.0	8.4	8.4	33.0	33.0	97.1	97.1	7.1	7.1	7.1	2.3	2.3	2.3	2.1	2.7		
					21.0	8.4	33.0	97.0	7.1	7.1	7.1	2.3	2.3	2.3	3.2	2.7							
M3	Sunny	Moderate	9:53	Surface	1.1	21.0	21.0	8.4	8.4	33.0	33.0	97.9	97.9	7.2	7.2	7.2	2.1	2.0	2.0	3.2	2.9	3.2	
					21.0	8.4	33.0	97.8	7.2	2.0	2.5												
				Middle	3.7	21.0	21.0	8.4	8.4	33.0	33.0	97.5	97.6	7.2	7.2	7.2	2.2	2.2	2.2	3.5	3.1		
					21.0	8.4	33.0	97.6	7.2	2.2	2.7												
				Bottom	6.5	21.0	21.0	8.4	8.4	33.0	33.0	97.0	97.0	7.1	7.1	7.1	2.2	2.2	2.2	3.3	3.7		
					21.0	8.4	33.0	97.0	7.1	7.1	7.1	2.2	2.2	2.2	4.0	3.7							
M4	Sunny	Moderate	9:09	Surface	1.1	21.0	21.0	8.3	8.3	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.5	2.4	2.4	4.3	4.0	3.1	
					21.0	8.3	33.0	97.5	7.2	2.4	3.6												
				Middle	5.1	21.0	21.0	8.3	8.3	33.0	33.0	97.3	97.3	7.1	7.1	7.1	2.4	2.4	2.4	3.0	2.8		
					21.0	8.3	33.0	97.3	7.1	7.1	7.1	2.4	2.4	2.4	2.6	2.8							
				Bottom	9.1	21.0	21.0	8.3	8.3	33.0	33.0	97.0	97.0	7.1	7.1	7.1	2.5	2.5	2.5	2.8	2.6		
					21.0	8.3	33.0	97.0	7.1	7.1	7.1	2.5	2.5	2.5	2.4	2.6							
M5	Sunny	Moderate	10:18	Surface	1.0	21.1	21.1	8.3	8.3	33.0	33.0	97.4	97.5	7.2	7.2	7.1	2.1	2.1	2.1	3.1	3.6	3.2	
					21.1	8.3	33.0	97.5	7.2	2.1	4.0												
				Middle	5.5	21.0	21.0	8.3	8.3	33.0	33.0	97.0	97.0	7.1	7.1	7.1	2.3	2.3	2.3	3.5	3.5		
					21.0	8.3	33.0	97.0	7.1	7.1	7.1	2.3	2.3	2.3	3.4	3.5							
				Bottom	10.0	21.1	21.1	8.3	8.3	33.0	33.0	96.8	96.8	7.1	7.1	7.1	2.2	2.2	2.2	2.8	2.6		
					21.1	8.3	33.0	96.8	7.1	7.1	7.1	2.2	2.2	2.2	2.4	2.6							
M6	Sunny	Moderate	10:05	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.2		
					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
				Middle	2.1	21.1	21.1	8.3	8.3	33.0	33.0	97.2	97.2	7.1	7.1	7.1	2.1	2.1	2.1	2.8		3.2	
					21.1	8.3	33.0	97.2	7.1	7.1	7.1	2.1	2.1	2.1	3.5	3.2							
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 15 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 3.0 NTU</u>	<u>C2: 3.2 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 3.8 mg/L</u>	<u>C2: 4.2 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 3.8 mg/L</u>	<u>C2: 4.2 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
	<u>C2: 2.9 mg/L</u>	<u>C2: 3.2 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 15 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
C1	Sunny	Moderate	16:55	Surface	1.1	21.1	21.1	8.3	8.3	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.0	2.0	2.2	2.2	2.2	2.2	2.2	2.6
				Middle	9.0	20.9	21.0	8.3	8.3	33.0	33.0	97.3	97.3	7.1	7.1	7.1	2.1	2.1	2.5	2.6				
				Bottom	17.0	21.0	21.0	8.3	8.3	33.0	33.0	97.3	97.3	7.1	7.1	7.1	2.1	2.1	2.7	3.1				
C2	Sunny	Moderate	15:10	Surface	1.1	21.1	21.0	8.1	8.1	33.0	33.0	98.0	98.0	7.2	7.2	7.2	2.4	2.4	4.0	3.8	2.4	4.0	3.8	3.2
				Middle	16.6	20.9	20.9	8.1	8.1	33.0	33.0	97.1	97.2	7.1	7.1	7.1	2.6	2.6	2.6	3.0				
				Bottom	32.0	20.9	20.9	8.2	8.2	33.0	33.0	96.6	96.6	7.1	7.1	7.1	2.3	2.3	2.8	2.9				
G1	Sunny	Moderate	15:49	Surface	1.1	21.5	21.2	8.4	8.4	33.0	33.0	97.7	97.7	7.2	7.2	7.2	2.3	2.3	2.0	1.8	2.3	2.0	2.5	2.3
				Middle	4.0	20.9	20.9	8.4	8.4	33.0	33.0	97.6	97.6	7.2	7.2	7.2	2.3	2.3	2.9	2.7				
				Bottom	7.0	20.8	20.8	8.4	8.4	33.0	33.0	97.3	97.3	7.1	7.1	7.1	2.2	2.2	3.0	2.7				
G2	Sunny	Moderate	15:32	Surface	1.0	21.5	21.2	8.4	8.4	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.3	2.3	3.4	3.2	2.3	2.9	3.2	2.9
				Middle	5.1	20.9	20.9	8.4	8.4	33.0	33.0	97.3	97.3	7.2	7.2	7.2	2.2	2.2	2.9	3.1				
				Bottom	9.1	20.8	20.8	8.4	8.4	33.0	33.0	97.1	97.1	7.1	7.1	7.1	2.2	2.2	2.4	2.5				
G3	Sunny	Moderate	15:55	Surface	1.1	21.9	21.4	8.4	8.4	33.0	33.0	97.7	97.8	7.2	7.2	7.2	2.2	2.2	3.3	3.0	2.2	2.7	3.0	2.8
				Middle	4.1	20.9	20.9	8.4	8.4	33.0	33.0	97.6	97.6	7.2	7.2	7.2	2.2	2.2	3.1	2.9				
				Bottom	7.0	20.7	20.8	8.4	8.4	33.0	33.0	97.2	97.2	7.1	7.1	7.1	2.1	2.1	2.6	2.6				
G4	Sunny	Moderate	16:08	Surface	1.1	21.9	21.5	8.3	8.3	33.0	33.0	97.4	97.4	7.2	7.2	7.2	2.1	2.1	4.0	3.7	2.1	2.4	3.7	2.8
				Middle	4.0	21.0	21.0	8.3	8.3	33.0	33.0	97.1	97.1	7.1	7.1	7.1	2.1	2.2	3.4	2.8				
				Bottom	7.0	20.9	20.9	8.3	8.3	33.0	33.0	96.8	96.8	7.1	7.1	7.1	2.1	2.1	2.0	1.8				
M1	Sunny	Moderate	15:37	Surface	1.1	21.7	21.4	8.4	8.4	33.0	33.0	97.9	97.9	7.2	7.2	7.2	2.2	2.2	2.4	2.3	2.2	2.1	2.3	2.5
				Middle	3.1	20.9	20.9	8.4	8.4	33.0	33.0	97.6	97.6	7.2	7.2	7.2	2.2	2.2	2.8	2.6				
				Bottom	5.0	20.8	20.8	8.4	8.4	33.0	33.0	97.3	97.3	7.2	7.2	7.2	2.3	2.3	3.0	2.8				
M2	Sunny	Moderate	15:25	Surface	1.0	21.2	21.1	8.3	8.3	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.3	2.4	3.8	3.3	2.4	2.8	3.3	2.8
				Middle	5.5	20.8	20.8	8.3	8.3	33.0	33.0	97.3	97.3	7.2	7.2	7.2	2.6	2.6	2.8	3.0				
				Bottom	10.0	20.8	20.8	8.4	8.4	33.0	33.0	97.0	97.0	7.1	7.1	7.1	2.3	2.3	1.8	2.2				
M3	Sunny	Moderate	16:02	Surface	1.1	21.4	21.2	8.4	8.4	33.0	33.0	97.9	97.9	7.2	7.2	7.2	2.1	2.1	2.9	2.5	2.2	2.1	2.5	2.2
				Middle	4.1	20.9	20.9	8.4	8.4	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.2	2.2	2.7	2.4				
				Bottom	7.0	20.7	20.7	8.4	8.4	33.0	33.0	97.1	97.1	7.1	7.1	7.1	2.2	2.2	1.5	1.6				
M4	Sunny	Moderate	15:18	Surface	1.1	21.8	21.4	8.3	8.3	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.5	2.5	2.4	2.1	2.4	2.7	2.4	2.4
				Middle	5.0	20.9	20.9	8.3	8.3	33.0	33.0	97.3	97.3	7.1	7.1	7.1	2.3	2.3	2.0	2.4				
				Bottom	9.1	20.8	20.8	8.3	8.3	33.0	33.0	97.1	97.1	7.1	7.1	7.1	2.4	2.4	2.4	2.7				
M5	Sunny	Moderate	16:43	Surface	1.0	21.0	21.0	8.3	8.3	33.0	33.0	97.5	97.5	7.2	7.2	7.2	2.1	2.1	2.5	3.0	2.2	3.4	3.0	2.6
				Middle	6.1	20.9	21.0	8.3	8.3	33.0	33.0	97.1	97.2	7.1	7.1	7.1	2.3	2.3	2.4	2.7				
				Bottom	11.1	20.9	20.9	8.3	8.3	33.0	33.0	96.8	96.8	7.1	7.1	7.1	2.2	2.2	2.0	2.2				
M6	Sunny	Moderate	16:23	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-	-	3.2
				Middle	2.2	21.8	21.4	8.3	8.3	33.0	33.0	97.2	97.2	7.1	7.1	7.1	8.0	8.0	2.7	3.2				
				Bottom	-	20.9	-	8.3	-	-	-	-	-	-	-	-	8.0	-	3.7	-				

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 15 December 2021 (Mid-Flood Tide)

<u>Parameter</u> <u>(unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C1: 2.8 NTU</u>	<u>C1: 3.0 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 2.6 mg/L</u>	<u>C1: 2.9 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 2.6 mg/L</u>	<u>C1: 2.9 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
	<u>C1: 3.7 mg/L</u>	<u>C1: 4.0 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 17 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Moderate	17:47	Surface	1.1	21.2	8.3	8.3	32.5	32.5	102.8	102.9	7.1	7.1	7.0	1.5	1.5	1.4	3.2	3.1	3.6	
					21.0	8.3	8.3	32.5	32.5	102.9	102.9	7.1	7.1	1.5		1.5	2.9					
					21.0	8.3	8.3	32.6	32.6	101.6	101.7	7.0	7.0	1.0		1.0	3.7					
				Middle	9.1	21.0	8.3	8.3	32.6	32.6	101.8	101.7	7.0	7.0	7.0	1.0	1.0	1.4	1.0	3.7	3.6	
					21.1	8.3	8.3	32.6	32.6	101.8	101.7	7.0	7.0	1.0		1.0	3.6					
					20.8	8.3	8.3	32.9	32.9	97.2	97.2	6.7	6.7	1.6		1.6	3.8					
Bottom	17.1	20.8	8.3	8.3	32.9	32.9	97.2	97.2	6.7	6.7	6.7	1.6	1.6	1.4	1.6	4.0	3.6					
	20.8	8.3	8.3	32.9	32.9	97.2	97.2	6.7	6.7	1.6		1.6	4.2									
	20.8	8.3	8.3	32.9	32.9	97.2	97.2	6.7	6.7	1.6		1.6	4.0									
C2	Sunny	Moderate	16:14	Surface	1.1	21.3	8.2	8.2	32.5	32.5	104.0	104.0	7.1	7.1	7.0	0.5	0.4	1.4	2.8	2.8	3.7	
					21.3	8.2	8.2	32.5	32.5	104.0	104.0	7.1	7.1	0.4		0.4	2.7					
					20.8	8.2	8.2	32.8	32.8	99.1	99.1	6.8	6.8	1.1		1.1	3.6					
				Middle	16.0	20.8	8.2	8.2	32.8	32.8	99.1	99.1	6.8	6.8	7.0	1.1	1.1	1.4	1.1	3.6	3.7	
					20.8	8.2	8.2	32.8	32.8	99.1	99.1	6.8	6.8	1.1		1.1	3.6					
					20.8	8.2	8.2	32.8	32.8	99.1	99.1	6.8	6.8	1.1		1.1	3.6					
Bottom	31.1	20.8	8.3	8.3	32.8	32.8	97.0	97.1	6.7	6.7	6.7	2.9	2.6	1.4	2.9	4.6	3.7					
	20.8	8.3	8.3	32.8	32.8	97.1	97.1	6.7	6.7	2.4		2.6	4.7									
	20.8	8.3	8.3	32.8	32.8	97.1	97.1	6.7	6.7	2.4		2.6	4.7									
G1	Sunny	Moderate	16:55	Surface	1.1	21.3	8.3	8.3	32.5	32.5	103.1	103.2	7.1	7.1	7.1	1.3	1.3	1.0	3.2	3.4	2.8	
					21.3	8.3	8.3	32.5	32.5	103.2	103.2	7.1	7.1	1.3		1.3	3.5					
					21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	0.8		0.8	2.8					
				Middle	4.1	21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	7.0	0.9	0.8	1.0	0.9	2.9	2.8	
					21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	0.9		0.8	2.9					
					21.1	8.3	8.3	32.6	32.6	102.6	102.6	7.1	7.0	0.8		0.8	2.4					
Bottom	7.0	21.1	8.3	8.3	32.6	32.6	102.6	102.6	7.0	7.0	7.0	0.8	0.8	1.0	0.8	2.3	2.8					
	21.1	8.3	8.3	32.6	32.6	102.6	102.6	7.0	7.0	0.8		0.8	2.1									
	21.1	8.3	8.3	32.6	32.6	102.6	102.6	7.0	7.0	0.8		0.8	2.1									
G2	Sunny	Moderate	16:35	Surface	1.1	21.2	8.3	8.3	32.5	32.5	103.3	103.3	7.1	7.1	7.1	1.7	1.7	1.1	4.0	4.1	3.2	
					21.3	8.3	8.3	32.5	32.5	103.3	103.3	7.1	7.1	1.7		1.7	4.1					
					21.1	8.3	8.3	32.6	32.6	102.2	102.2	7.0	7.0	1.0		1.0	3.0					
				Middle	5.1	21.1	8.3	8.3	32.6	32.6	102.1	102.2	7.0	7.0	7.0	1.0	1.0	1.1	1.0	3.0	3.2	
					21.1	8.3	8.3	32.6	32.6	102.1	102.2	7.0	7.0	1.0		1.0	2.9					
					21.0	8.3	8.3	32.6	32.6	101.5	101.5	7.0	7.0	0.6		0.6	2.6					
Bottom	9.2	21.0	8.3	8.3	32.7	32.7	101.3	101.4	7.0	7.0	7.0	0.7	0.6	1.1	0.7	2.5	3.2					
	21.0	8.3	8.3	32.7	32.7	101.3	101.4	7.0	7.0	0.7		0.6	2.4									
	21.0	8.3	8.3	32.7	32.7	101.3	101.4	7.0	7.0	0.7		0.6	2.4									
G3	Sunny	Moderate	17:03	Surface	1.0	21.2	8.3	8.3	32.5	32.5	103.2	103.3	7.1	7.1	7.1	1.0	1.0	1.0	4.0	4.0	3.1	
					21.2	8.3	8.3	32.5	32.5	103.3	103.3	7.1	7.1	1.0		1.0	4.0					
					21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	0.8		0.8	3.2					
				Middle	4.1	21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	7.0	0.8	0.8	1.0	0.8	3.1	3.1	
					21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	0.8		0.8	2.9					
					21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	1.1		1.1	2.1					
Bottom	7.0	21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	7.0	1.1	1.1	1.0	1.1	2.1	3.1					
	21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	1.1		1.1	2.1									
	21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	1.1		1.1	2.1									
G4	Sunny	Moderate	17:17	Surface	1.1	21.3	8.3	8.3	32.5	32.5	103.4	103.5	7.1	7.1	7.1	1.2	1.2	0.9	4.2	4.3	3.0	
					21.3	8.3	8.3	32.5	32.5	103.5	103.5	7.1	7.1	1.2		1.2	4.3					
					21.2	8.3	8.3	32.5	32.5	103.3	103.3	7.1	7.1	0.8		0.9	2.8					
				Middle	4.1	21.2	8.3	8.3	32.5	32.5	103.3	103.3	7.1	7.1	7.0	0.9	0.9	1.0	0.9	2.7	3.0	
					21.2	8.3	8.3	32.5	32.5	103.3	103.3	7.1	7.1	0.9		0.9	2.6					
					21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	0.7		0.7	2.0					
Bottom	7.0	21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	7.0	0.7	0.7	1.0	0.7	2.1	3.0					
	21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	0.7		0.7	2.2									
	21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	0.7		0.7	2.2									
M1	Sunny	Moderate	16:43	Surface	1.1	21.3	8.3	8.3	32.5	32.5	103.6	103.6	7.1	7.1	7.1	1.4	1.5	1.1	3.4	3.5	3.1	
					21.3	8.3	8.3	32.5	32.5	103.6	103.6	7.1	7.1	1.4		1.5	3.5					
					21.2	8.3	8.3	32.5	32.5	103.5	103.5	7.1	7.1	1.4		1.4	3.2					
				Middle	3.1	21.2	8.3	8.3	32.5	32.5	103.5	103.5	7.1	7.1	7.1	1.4	1.4	1.1	1.4	3.3	3.1	
					21.2	8.3	8.3	32.5	32.5	103.5	103.5	7.1	7.1	1.4		1.4	3.3					
					21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	0.6		0.5	2.6					
Bottom	5.1	21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	7.1	0.6	0.5	1.1	0.6	2.6	3.1					
	21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	0.5		0.5	2.5									
	21.2	8.3	8.3	32.6	32.6	103.0	103.0	7.1	7.1	0.5		0.5	2.5									
M2	Sunny	Moderate	16:28	Surface	1.1	21.3	8.3	8.3	32.5	32.5	103.5	103.6	7.1	7.1	7.1	1.4	1.4	1.5	2.0	2.0	2.7	
					21.3	8.3	8.3	32.5	32.5	103.6	103.6	7.1	7.1	1.4		1.4	2.0					
					21.1	8.3	8.3	32.6	32.6	102.4	102.5	7.0	7.0	1.5		1.5	2.4					
				Middle	6.2	21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	7.0	1.5	1.5	1.5	1.5	2.5	2.7	
					21.1	8.3	8.3	32.6	32.6	102.5	102.5	7.0	7.0	1.5		1.5	2.5					
					20.8	8.3	8.3	32.8	32.8	98.9	98.9	6.8	6.8	1.7		1.7	3.4					
Bottom	11.1	20.8	8.3	8.3	32.8	32.8	98.8	98.9	6.8	6.8	6.8	1.7	1.7	1.5	1.7	3.6	2.7					
	20.8	8.3	8.3	32.8	32.8	98.8	98.9	6.8	6.8	1.7		1.7	3.7									
	20.8	8.3	8.3	32.8	32.8	98.8	98.9	6.8	6.8	1.7		1.7	3.7									
M3	Sunny	Moderate	17:11	Surface	1.1	21.2	8.3	8.3	32.5	32.5	103.0	103.0	7.1	7.1	7.1	1.5	1.5	1.2	4.4	4.4	3.8	
					21.2	8.3	8.3	32.5	32.5	103.0	103.0	7.1	7.1	1.5		1.5	4.4					
					21.2	8.3	8.3	32.5	32.5	103.1	103.2	7.1	7.1	1.3		1.3	3.7					
				Middle	4.1	21.2	8.3	8.3	32.5	32.5	103.2	103.2	7.1	7.1	7.0	1.3	1.3	1.2	1.3	3.7	3.8	
					21.2	8.3	8.3	32.5	32.5	103.2	103.2	7.1	7.1	1.3		1.3	3.6					
					21.1	8.3	8.3	32.6	32.6	102.6	102.6	7.1	7.0	0.9		0.9	3.4					
Bottom	7.1	21.1	8.3	8.3	32.6	32.6	102.6	102.6	7.0	7.0	7.0	0.9	0.9	1.2	0.9	3.3	3.8					
	21.1	8.3	8.3																			

Action and Limit Levels for Marine Water Quality on 17 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 3.1 NTU</u>	<u>C2: 3.4 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 3.3 mg/L</u>	<u>C2: 3.6 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 3.3 mg/L</u>	<u>C2: 3.6 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C2: 5.5 mg/L</u>		<u>C2: 6.0 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 17 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value
C1	Sunny	Moderate	11:49	Surface	1.1	21.4	21.4	8.3	8.3	32.6	32.5	101.1	101.3	7.0	7.0	6.9	1.6	1.6	1.5	4.4	4.5	4.1
				Middle	9.1	21.2	21.2	8.3	8.3	32.6	32.6	100.3	100.4	6.9	6.9	6.9	1.1	1.1	1.5	4.0	4.1	
				Bottom	17.1	21.0	21.0	8.3	8.3	32.9	32.9	100.4	100.4	6.7	6.7	6.7	1.1	1.1	1.5	3.8	3.8	
C2	Sunny	Moderate	10:17	Surface	1.1	21.5	21.5	8.2	8.2	32.5	32.5	103.0	103.0	7.1	7.1	6.9	0.5	0.5	1.5	3.8	3.9	3.5
				Middle	16.0	21.0	21.0	8.2	8.2	32.8	32.8	103.0	103.0	7.1	7.1	6.9	0.5	0.5	1.5	3.7	3.6	
				Bottom	31.0	21.0	21.0	8.2	8.2	32.8	32.8	97.5	97.6	6.7	6.7	6.6	1.0	1.0	1.5	3.5	3.1	
G1	Sunny	Moderate	10:58	Surface	1.0	21.5	21.5	8.3	8.3	32.5	32.5	101.8	101.9	7.0	7.0	7.0	1.3	1.3	1.1	4.9	5.0	3.6
				Middle	4.0	21.4	21.4	8.3	8.3	32.6	32.6	101.9	101.9	7.0	7.0	7.0	1.0	1.0	1.1	3.3	3.2	
				Bottom	7.0	21.4	21.4	8.3	8.3	32.6	32.6	101.7	101.7	7.0	7.0	7.0	0.9	0.9	1.1	2.8	2.6	
G2	Sunny	Moderate	10:38	Surface	1.1	21.5	21.5	8.3	8.3	32.5	32.5	102.4	102.4	7.0	7.0	7.0	1.7	1.7	1.1	4.5	4.3	3.9
				Middle	5.0	21.3	21.3	8.3	8.3	32.6	32.6	100.9	100.9	6.9	6.9	6.9	0.9	0.9	1.1	3.8	3.9	
				Bottom	9.0	21.2	21.2	8.3	8.3	32.7	32.7	100.9	99.9	6.9	6.9	6.9	0.6	0.6	1.1	3.6	3.6	
G3	Sunny	Moderate	11:05	Surface	1.0	21.4	21.4	8.3	8.3	32.5	32.5	102.1	102.1	7.0	7.0	7.0	1.2	1.2	1.1	3.6	3.8	3.1
				Middle	4.1	21.4	21.4	8.3	8.3	32.6	32.6	101.8	101.9	7.0	7.0	7.0	0.9	0.9	1.1	3.4	3.3	
				Bottom	7.1	21.4	21.4	8.3	8.3	32.6	32.6	101.9	101.9	7.0	7.0	7.0	0.9	0.9	1.1	3.1	2.4	
G4	Sunny	Moderate	11:20	Surface	1.1	21.5	21.5	8.3	8.3	32.5	32.5	102.3	102.3	7.0	7.0	7.0	1.2	1.2	1.0	2.0	2.1	3.0
				Middle	4.0	21.4	21.4	8.3	8.3	32.5	32.5	102.1	102.2	7.0	7.0	7.0	1.0	1.0	1.0	2.1	3.0	
				Bottom	7.0	21.4	21.4	8.3	8.3	32.6	32.6	101.6	101.6	7.0	7.0	7.0	0.8	0.8	1.0	3.6	3.8	
M1	Sunny	Moderate	10:45	Surface	1.0	21.5	21.5	8.3	8.3	32.5	32.5	102.6	102.6	7.0	7.0	7.0	1.5	1.5	1.2	3.5	3.6	4.3
				Middle	2.9	21.5	21.5	8.3	8.3	32.5	32.5	102.5	102.5	7.0	7.0	7.0	1.3	1.3	1.2	4.2	4.1	
				Bottom	5.1	21.4	21.4	8.3	8.3	32.6	32.6	101.9	101.9	7.0	7.0	7.0	0.7	0.7	1.2	5.0	5.2	
M2	Sunny	Moderate	10:30	Surface	1.1	21.5	21.5	8.3	8.3	32.5	32.5	102.5	102.5	7.0	7.0	7.0	1.4	1.4	1.6	3.3	3.3	4.0
				Middle	6.1	21.3	21.3	8.3	8.3	32.6	32.6	101.1	101.2	7.0	7.0	7.0	1.5	1.5	1.6	4.1	4.0	
				Bottom	11.0	21.1	21.1	8.3	8.3	32.8	32.8	98.3	98.3	6.8	6.8	6.8	1.8	1.8	1.6	4.7	4.9	
M3	Sunny	Moderate	11:14	Surface	1.0	21.5	21.5	8.3	8.3	32.5	32.5	102.2	102.2	7.0	7.0	7.0	1.5	1.5	1.3	2.6	2.6	3.5
				Middle	4.1	21.5	21.5	8.3	8.3	32.5	32.5	102.2	102.3	7.0	7.0	7.0	1.3	1.3	1.3	3.6	3.5	
				Bottom	7.1	21.4	21.4	8.3	8.3	32.6	32.6	101.5	101.5	7.0	7.0	7.0	0.9	1.0	1.3	4.5	4.4	
M4	Sunny	Moderate	10:24	Surface	1.0	21.5	21.5	8.3	8.3	32.5	32.5	102.4	102.4	7.0	7.0	7.0	1.6	1.6	1.4	2.1	2.2	2.9
				Middle	5.0	21.4	21.4	8.3	8.3	32.6	32.6	101.7	101.8	7.0	7.0	7.0	1.5	1.5	1.4	2.2	2.9	
				Bottom	9.2	21.2	21.2	8.3	8.3	32.6	32.6	99.9	99.9	6.9	6.9	6.9	1.0	1.0	1.4	3.5	3.7	
M5	Sunny	Moderate	11:39	Surface	1.0	21.4	21.4	8.3	8.3	32.5	32.5	102.1	102.1	7.0	7.0	7.0	1.5	1.5	1.2	2.8	2.7	3.3
				Middle	6.0	21.3	21.3	8.3	8.3	32.6	32.6	101.6	101.6	7.0	7.0	7.0	1.0	1.0	1.2	3.2	3.3	
				Bottom	11.0	21.1	21.1	8.3	8.3	32.7	32.7	99.1	99.1	6.8	6.8	6.8	1.0	1.0	1.2	4.0	4.0	
M6	Sunny	Moderate	11:28	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	-	-	2.7
				Middle	2.1	21.4	21.4	8.3	8.3	32.5	32.5	102.2	102.2	7.0	7.0	7.0	8.0	8.0	1.4	2.8	2.7	
				Bottom	-	21.5	-	8.3	-	32.5	-	102.2	-	7.0	-	-	8.0	-	1.4	2.6	-	

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 17 December 2021 (Mid-Flood Tide)

<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C1: 2.0 NTU</u>	<u>C1: 2.2 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 5.4 mg/L</u>	<u>C1: 5.9 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 5.4 mg/L</u>	<u>C1: 5.9 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C1: 4.6 mg/L</u>		<u>C1: 4.9 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 20 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	13:39	Surface	1.1	21.1	8.3	8.3	32.5	32.5	102.0	102.0	7.8	7.8	7.8	1.4	1.4	2.0	6.3	6.4	4.3	
					21.0	8.3	8.3	32.5	32.5	102.0	7.8	7.8	1.4	1.4	6.4							
					20.9	8.3	8.3	32.5	32.5	101.5	7.8	7.8	1.6	1.6	3.7							
				Middle	9.0	21.1	8.3	8.3	32.5	32.5	101.5	101.5	7.8	7.8	1.6	1.6	2.0		4.0	3.9		
					21.3	8.3	8.3	32.5	32.5	101.1	7.7	7.7	2.7	2.9	2.9							
						20.9	8.3	8.3	32.5	32.5	100.9	7.7	7.7	3.1	2.9	2.7						
Bottom	17.1	20.9	8.3	8.3	32.5	32.5	101.7	101.0	7.7	7.7	7.7	2.7	2.9	2.0	2.9	2.8						
	20.9	8.3	8.3	32.5	32.5	102.6	7.8	7.8	1.3	1.3	4.9											
	21.4	21.2	8.0	8.0	32.5	32.5	102.5	7.8	7.8	1.3	1.3	5.2										
C2	Sunny	Calm	11:52	Surface	1.1	20.9	8.3	8.0	32.5	32.5	101.7	101.7	7.8	7.8	7.8	1.4	1.4	1.8	4.3	4.2	4.2	
					21.0	8.3	8.2	8.2	32.5	32.5	101.7	7.8	7.8	1.4	1.4	4.0						
					20.9	8.3	8.3	32.5	32.5	100.6	7.7	7.7	2.6	2.6	3.4							
				Middle	16.0	20.9	8.3	8.3	32.5	32.5	100.6	100.6	7.7	7.7	7.7	2.6	2.6		1.8	3.6		3.5
					20.9	8.3	8.3	32.5	32.5	101.7	7.8	7.8	1.4	1.4	4.3							
						20.9	8.3	8.3	32.5	32.5	100.6	7.7	7.7	2.6	2.6	3.6						
Bottom	31.0	20.9	8.3	8.3	32.5	32.5	100.6	100.6	7.7	7.7	7.7	2.6	2.6	1.8	3.4	3.5						
	20.9	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	3.3											
	21.2	21.2	8.0	8.0	32.5	32.5	102.5	7.8	7.8	1.3	1.3	3.1										
G1	Sunny	Calm	12:33	Surface	1.0	21.2	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.4	1.4	1.4	3.3	3.2	4.6	
					20.9	8.3	8.3	32.5	32.5	101.8	7.8	7.8	1.4	1.4	4.7							
					20.9	8.3	8.3	32.5	32.5	101.8	7.8	7.8	1.4	1.4	4.6							
				Middle	4.1	20.9	8.3	8.3	32.5	32.5	101.8	101.8	7.8	7.8	7.8	1.4	1.4		1.4	4.7		4.7
					20.8	8.3	8.3	32.5	32.5	101.5	7.8	7.8	1.6	1.5	6.2							
						20.7	8.3	8.3	32.5	32.5	101.4	7.7	7.7	1.5	1.5	5.8						
Bottom	7.1	20.8	8.3	8.3	32.5	32.5	101.5	101.5	7.7	7.7	7.7	1.6	1.5	1.4	4.7	4.7						
	20.9	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	3.3											
	21.2	21.2	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	3.1										
G2	Sunny	Calm	12:13	Surface	1.1	21.0	8.3	8.3	32.5	32.5	102.0	102.1	7.8	7.8	7.8	1.4	1.4	1.4	3.7	3.8	4.2	
					20.9	8.3	8.3	32.5	32.5	102.1	7.8	7.8	1.4	1.4	3.8							
					20.9	8.3	8.3	32.5	32.5	101.9	7.8	7.8	1.4	1.4	4.1							
				Middle	5.0	20.9	8.3	8.3	32.5	32.5	101.9	101.9	7.8	7.8	7.8	1.4	1.4		1.4	4.1		4.1
					20.8	8.3	8.3	32.5	32.5	101.6	7.8	7.8	1.5	1.5	4.8							
						20.9	8.3	8.3	32.5	32.5	101.4	7.7	7.7	1.6	1.6	4.6						
Bottom	9.1	20.9	8.3	8.3	32.5	32.5	101.5	101.5	7.7	7.7	7.7	1.6	1.6	1.4	4.7	4.7						
	21.2	21.1	8.3	8.3	32.5	32.5	102.2	7.8	7.8	7.8	1.3	1.3	3.5									
	20.9	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	3.7											
G3	Sunny	Calm	12:41	Surface	1.0	21.1	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.4	1.4	1.4	4.1	4.2	4.4	
					20.9	8.3	8.3	32.5	32.5	101.7	7.8	7.8	1.4	1.4	4.2							
					20.9	8.3	8.3	32.5	32.5	101.7	7.8	7.8	1.4	1.4	4.2							
				Middle	4.1	20.9	8.3	8.3	32.5	32.5	101.7	101.7	7.8	7.8	7.8	1.4	1.4		1.4	4.2		4.2
					20.8	8.3	8.3	32.5	32.5	101.4	7.7	7.7	1.6	1.6	5.4							
						20.7	8.3	8.3	32.5	32.5	101.4	7.7	7.7	1.6	1.6	5.4						
Bottom	7.1	20.8	8.3	8.3	32.5	32.5	101.4	101.4	7.7	7.7	7.7	1.6	1.6	1.4	4.7	4.7						
	21.2	21.1	8.3	8.3	32.5	32.5	102.2	7.8	7.8	7.8	1.3	1.3	3.5									
	20.9	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	3.7											
G4	Sunny	Calm	12:53	Surface	1.0	21.4	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.3	1.3	1.5	5.3	5.3	4.2	
					21.0	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	5.3							
					21.0	8.3	8.3	32.5	32.5	101.7	7.8	7.8	1.4	1.5	4.2							
				Middle	4.0	20.9	8.3	8.3	32.5	32.5	101.7	101.7	7.8	7.8	7.8	1.4	1.5		1.5	4.2		4.2
					20.9	8.3	8.3	32.5	32.5	101.3	7.7	7.7	1.6	1.6	3.2							
						20.9	8.3	8.3	32.5	32.5	101.3	7.7	7.7	1.6	1.6	3.1						
Bottom	7.1	20.9	8.3	8.3	32.5	32.5	101.3	101.3	7.7	7.7	7.7	1.6	1.6	1.4	4.7	4.7						
	21.8	21.4	8.3	8.3	32.5	32.5	102.2	7.8	7.8	7.8	1.3	1.3	3.0									
	21.0	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	3.1											
M1	Sunny	Calm	12:21	Surface	1.1	21.3	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.3	1.4	1.4	3.0	3.1	3.4	
					21.1	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	3.1							
					20.9	8.3	8.3	32.5	32.5	101.9	7.8	7.8	1.3	1.3	3.3							
				Middle	3.1	21.0	8.3	8.3	32.5	32.5	101.9	101.9	7.8	7.8	7.8	1.3	1.3		1.4	3.4		3.4
					20.8	8.3	8.3	32.5	32.5	101.7	7.8	7.8	1.4	1.4	3.7							
						20.8	8.3	8.3	32.5	32.5	101.7	7.8	7.8	1.4	1.4	3.9						
Bottom	5.1	20.8	8.3	8.3	32.5	32.5	101.7	101.7	7.8	7.8	7.8	1.4	1.4	1.4	3.8	3.8						
	21.6	21.3	8.3	8.3	32.5	32.5	102.2	7.8	7.8	7.8	1.4	1.4	3.2									
	21.1	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	3.2											
M2	Sunny	Calm	12:06	Surface	1.1	21.0	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.5	1.5	1.5	3.2	3.2	3.5	
					20.9	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.5	1.5	3.2							
					20.8	8.3	8.3	32.5	32.5	101.9	7.8	7.8	1.4	1.4	3.5							
				Middle	5.5	20.8	8.3	8.3	32.5	32.5	102.0	102.0	7.8	7.8	7.8	1.4	1.4		1.4	3.4		3.4
					20.8	8.3	8.3	32.5	32.5	101.1	7.7	7.7	1.7	1.7	3.7							
						20.8	8.3	8.3	32.5	32.5	101.1	7.7	7.7	1.7	1.7	3.7						
Bottom	10.0	20.8	8.3	8.3	32.5	32.5	101.1	101.1	7.7	7.7	7.7	1.7	1.7	1.4	3.9	3.9						
	21.2	21.0	8.3	8.3	32.5	32.5	102.2	7.8	7.8	7.8	1.3	1.3	3.0									
	20.9	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.3	1.3	3.1											
M3	Sunny	Calm	12:47	Surface	1.1	21.0	8.3	8.3	32.5	32.5	102.1	102.1	7.8	7.8	7.8	1.4	1.3	1.4	2.8	2.7	3.0	
					21.0	8.3	8.3	32.5	32.5	102.1	7.8	7.8	1.4	1.3	2.6							
					20.9	8.3	8.3	32.5	32.5	101.8	7.8	7.8	1.4	1.4	3.0							
				Middle	4.1	20.9	8.3	8.3	32.5	32.5	101.8	101.8	7.8	7.8	7.8	1.5	1.4		1.4	3.0		3.0
					20.9	8.3	8.3	32.5	32.5	101.8	7.8	7.8	1.5	1.4	2.9							
						20.7	8.3	8.3	32.5	32.5	101.5	7.8	7.8	1.5	1.5	3.4						
Bottom	7.1	20.8	8.3	8.3	32.5	32.5	101.4	101.5	7.7	7.7	7.7	1.5	1.5	1.4	3.5	3.5						
	21.4	21.2	8.3	8.3	32.5	32.5	102.2	7.8	7.8	7.8	1.4	1.4	3.2									
	21.0	8.3	8.3	32.5	32.5	102.0	7.8	7.8	1.3	1.3	2.5											
M4	Sunny	Calm	11:59	Surface	1.0	21.2	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.4	1.4	1.4	4.8	5.0	3.8	
					21.0	8.3	8.3	32.5	32.5	102.2	7.8	7.8	1.4	1.4	5.1							
					20.9	8.2	8.2	32.5	32.5	101.9	7.8	7.8	1.3	1.3	3.5							
				Middle	5.1	20.9	8.2	8.2	32.5	32.5	101.9	101.9	7.8	7.8	7.8	1.3	1.3		1.4	3.		

Action and Limit Levels for Marine Water Quality on 20 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 3.1 NTU</u>	<u>C2: 3.4 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 6.1 mg/L</u>	<u>C2: 6.6 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 6.1 mg/L</u>	<u>C2: 6.6 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C2: 4.2 mg/L</u>		<u>C2: 4.6 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 20 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	9:07	Surface	1.1	20.3	20.3	8.3	8.3	32.5	32.5	102.1	102.1	7.8	7.8	7.8	1.4	1.4	2.2	3.0	3.1	3.5		
					20.3	8.3		32.5		102.1		7.8		1.4										
					20.2	8.3		32.5		101.7		7.8		1.5										
				Middle	8.5	20.2	8.3	8.3	32.5	32.5	101.6	101.7	7.8	7.8	1.6	1.5	3.4							
					20.2	8.3	32.5	101.7	7.7	3.7														
					20.0	20.0	8.3	8.3	32.5	32.5	100.7	100.7	7.7	7.7	3.5	3.6	3.9							
Bottom	16.0	20.0	8.3	8.3	32.5	32.5	100.7	100.7	7.7	7.7	3.7	4.0	4.0											
	C2	Sunny	Calm	7:30	Surface	1.0	20.3	20.3	8.3	8.3	32.5	32.5	102.8	102.8	7.8	7.8	7.8	1.3	1.3	1.7	3.4	3.5	3.9	
						20.3	8.3		32.5		102.7		7.8		1.3									
20.2						8.3	32.5		101.7		7.8		1.4											
Middle					16.1	20.2	8.3	8.3	32.5	32.5	101.7	101.7	7.8	7.8	1.4	1.4	3.8							
					20.2	8.3	32.5	101.7	7.8	1.4														
					20.0	20.0	8.3	8.3	32.5	32.5	100.7	100.7	7.7	7.7	4.1	4.3								
Bottom	31.1	20.0	8.3	8.3	32.5	32.5	100.6	100.7	7.7	7.7	2.4	2.4	4.3											
	G1	Sunny	Calm	8:08	Surface	1.0	20.3	20.3	8.3	8.3	32.5	32.5	102.1	102.1	7.8	7.8	7.8	1.4	1.4	1.4	2.6	2.7	3.0	
						20.3	8.3		32.5		102.1		7.8		1.4									
20.1						8.3	32.5		101.7		7.8		1.4											
Middle					3.8	20.2	8.3	8.3	32.5	32.5	101.7	101.7	7.8	7.8	1.4	1.4	2.7							
					20.2	8.3	32.5	101.7	7.8	1.4														
					20.1	20.1	8.3	8.3	32.5	32.5	101.4	101.4	7.7	7.7	1.6	1.6	3.4							
Bottom	6.6	20.1	8.3	8.3	32.5	32.5	101.3	101.4	7.7	7.7	1.5	1.6	3.4											
	G2	Sunny	Calm	7:50	Surface	1.0	20.2	20.2	8.3	8.3	32.5	32.5	102.1	102.1	7.8	7.8	7.8	1.4	1.4	1.5	3.4	3.3	3.0	
						20.2	8.3		32.5		102.1		7.8		1.4									
20.2						8.3	32.5		101.9		7.8		1.4											
Middle					5.0	20.2	8.3	8.3	32.5	32.5	101.9	101.9	7.8	7.8	1.4	1.4	2.8							
					20.2	8.3	32.5	101.9	7.8	1.4														
					20.1	20.1	8.3	8.3	32.5	32.5	101.2	101.2	7.7	7.7	1.6	1.7	2.8							
Bottom	9.0	20.1	8.3	8.3	32.5	32.5	101.1	101.2	7.7	7.7	1.7	1.7	2.8											
	G3	Sunny	Calm	8:16	Surface	1.0	20.3	20.3	8.3	8.3	32.5	32.5	102.1	102.2	7.8	7.8	7.8	1.3	1.3	1.4	3.3	3.5	3.8	
						20.3	8.3		32.5		102.2		7.8		1.3									
20.2						8.3	32.5		101.7		7.8		1.5											
Middle					3.7	20.2	8.3	8.3	32.5	32.5	101.7	101.7	7.8	7.8	1.5	1.5	3.9							
					20.2	8.3	32.5	101.7	7.8	1.5														
					20.1	20.1	8.3	8.3	32.5	32.5	101.5	101.5	7.7	7.7	1.6	1.6	4.2							
Bottom	6.5	20.1	8.3	8.3	32.5	32.5	101.5	101.5	7.7	7.7	1.6	1.6	4.0											
	G4	Sunny	Calm	8:34	Surface	1.1	20.3	20.3	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.3	1.3	1.4	3.3	3.3	2.9	
						20.3	8.3		32.5		102.2		7.8		1.3									
20.2						8.3	32.5		101.7		7.8		1.4											
Middle					3.8	20.2	8.3	8.3	32.5	32.5	101.7	101.7	7.8	7.8	1.4	1.4	2.6							
					20.2	8.3	32.5	101.7	7.8	1.4														
					20.1	20.1	8.3	8.3	32.5	32.5	101.4	101.4	7.7	7.7	1.6	1.6	2.6							
Bottom	6.6	20.1	8.3	8.3	32.5	32.5	101.3	101.4	7.7	7.7	1.6	1.6	2.6											
	M1	Sunny	Calm	7:57	Surface	1.0	20.3	20.3	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.4	1.4	1.4	2.3	2.4	3.1	
						20.3	8.3		32.5		102.2		7.8		1.4									
20.2						8.3	32.5		101.9		7.8		1.4											
Middle					3.0	20.2	8.3	8.3	32.5	32.5	101.9	101.9	7.8	7.8	1.4	1.4	3.1							
					20.2	8.3	32.5	101.9	7.8	1.4														
					20.2	8.3	32.5	101.8	7.8	1.4														
Bottom	5.1	20.2	8.3	8.3	32.5	32.5	101.8	101.8	7.8	7.8	1.4	1.4	4.0											
	M2	Sunny	Calm	7:44	Surface	1.0	20.2	20.2	8.3	8.3	32.5	32.5	102.1	102.2	7.8	7.8	7.8	1.4	1.4	1.5	3.8	3.8	3.3	
						20.2	8.3		32.5		102.2		7.8		1.4									
20.2						8.3	32.5		101.9		7.8		1.4											
Middle					5.2	20.2	8.3	8.3	32.5	32.5	101.9	101.9	7.8	7.8	1.4	1.4	3.5							
					20.2	8.3	32.5	101.9	7.8	1.4														
					20.1	20.1	8.3	8.3	32.5	32.5	101.2	101.2	7.7	7.7	1.6	1.7	2.7							
Bottom	9.5	20.1	8.3	8.3	32.5	32.5	101.2	101.2	7.7	7.7	1.7	1.7	3.0											
	M3	Sunny	Calm	8:26	Surface	1.0	20.2	20.2	8.3	8.3	32.5	32.5	102.1	102.1	7.8	7.8	7.8	1.4	1.4	1.4	3.3	3.4	3.8	
						20.2	8.3		32.5		102.0		7.8		1.4									
20.2						8.3	32.5		101.8		7.8		1.4											
Middle					3.7	20.2	8.3	8.3	32.5	32.5	101.9	101.9	7.8	7.8	1.4	1.4	3.8							
					20.2	8.3	32.5	101.9	7.8	1.4														
					20.1	20.1	8.3	8.3	32.5	32.5	101.4	101.4	7.7	7.7	1.5	1.5	4.2							
Bottom	6.5	20.1	8.3	8.3	32.5	32.5	101.4	101.4	7.7	7.7	1.6	1.5	4.1											
	M4	Sunny	Calm	7:37	Surface	1.0	20.3	20.3	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.4	1.4	1.4	3.2	3.2	3.0	
						20.3	8.3		32.5		102.2		7.8		1.4									
20.2						8.2	32.5		101.9		7.8		1.4											
Middle					5.0	20.2	8.2	8.2	32.5	32.5	101.9	101.9	7.8	7.8	1.4	1.4	3.0							
					20.2	8.2	32.5	101.9	7.8	1.4														
					20.2	8.2	32.5	101.7	7.8	1.3														
Bottom	9.1	20.2	8.2	8.2	32.5	32.5	101.7	101.7	7.8	7.8	1.3	1.3	2.8											
	M5	Sunny	Calm	8:55	Surface	1.1	20.2	20.2	8.3	8.3	32.5	32.5	102.1	102.1	7.8	7.8	7.8	1.3	1.4	2.3	2.7	2.6	3.2	
						20.2	8.3		32.5		102.0		7.8		1.4									
20.1						8.3	32.5		101.3		7.7		1.5											
Middle					5.5	20.1	8.3	8.3	32.5	32.5	101.3	101.3	7.7	7.7	1.5	1.5	3.3							
					20.1	8.3	32.5	101.3	7.7	1.5														
					20.0	8.3	32.5	100.6	7.7	3.7														
Bottom	10.0	20.0	8.3	8.3	32.5	32.5	100.6	100.6	7.7	7.7	4.3	4.0	3.6											
	M6	Sunny	Calm	8:43	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	-	-	3.8		
						20.2	8.3		32.5		101.9		7.8		8.0									
20.2						8.3	32.5		101.9		7.8		8.0											
Middle					2.0	20.2	8.3	8.3	32.5	32.5	101.9	101.9	7.8	7.8	-	-	3.9							
					20.2	8.3	32.5	101.9	7.8	-	-	3.7												
					-	-	-	-	-	-	-	-	-	-	-	-	-							

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 20 December 2021 (Mid-Flood Tide)

<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C1: 4.4 NTU</u>	<u>C1: 4.7 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 3.7 mg/L</u>	<u>C1: 4.0 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 3.7 mg/L</u>	<u>C1: 4.0 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C1: 4.7 mg/L</u>		<u>C1: 5.1 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 22 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	14:36	Surface	1.1	20.9	8.3	8.3	33.6	33.6	102.7	102.8	7.7	7.7	7.6	1.3	1.3	1.5	3.8	4.0	4.2	
					20.9	8.3	33.6	102.8	7.7	1.3	4.2											
					20.9	8.3	33.6	100.9	7.6	1.3	3.9											
				Middle	9.0	20.9	8.3	8.3	33.6	33.6	101.0	101.0	7.6	7.6	7.6	1.3	1.3	1.5	3.8	4.2		
					20.9	8.3	33.6	101.0	7.6	1.3	4.4											
					20.8	8.3	33.6	99.3	7.4	1.8	4.6											
Bottom	17.0	20.8	8.3	8.3	33.6	33.6	99.3	99.3	7.4	7.4	7.4	1.8	1.8	2.0	4.2	4.4						
	20.8	8.3	33.6	100.0	7.5	1.4	2.8															
	20.8	8.3	33.6	100.0	7.5	1.4	3.0															
C2	Sunny	Calm	13:44	Surface	1.1	20.9	8.2	8.2	33.6	33.6	103.1	103.1	7.7	7.7	7.6	1.2	1.2	1.4	3.4	3.8	3.2	
					20.9	8.2	33.6	103.1	7.7	1.3	4.2											
					20.8	8.2	33.6	100.7	7.5	1.5	3.0											
				Middle	16.0	20.8	8.2	8.2	33.6	33.6	100.9	100.8	7.6	7.5	7.5	1.6	1.6	1.4	3.2	3.1		
					20.8	8.3	33.6	100.0	7.5	1.4	2.6											
					20.8	8.3	33.6	100.0	7.5	1.4	3.0											
Bottom	31.1	20.8	8.3	8.3	33.6	33.6	100.0	100.0	7.5	7.5	7.5	1.4	1.4	2.0	2.8							
	20.8	8.3	33.6	100.0	7.5	1.4	3.0															
	20.8	8.3	33.6	100.0	7.5	1.4	2.6															
G1	Sunny	Calm	14:11	Surface	1.0	21.1	8.3	8.3	33.5	33.5	98.3	98.3	7.3	7.3	7.3	1.8	1.8	2.0	4.1	4.4	4.0	
					21.1	8.3	33.5	98.3	7.3	1.8	4.6											
					20.9	8.3	33.6	97.8	7.3	1.8	4.1											
				Middle	4.0	20.9	8.3	8.3	33.6	33.6	97.8	97.8	7.3	7.3	7.3	1.8	1.8	1.4	3.2	3.1		
					20.9	8.3	33.6	97.8	7.3	1.8	4.3											
					20.8	8.3	33.6	97.2	7.3	2.5	3.2											
Bottom	7.0	20.8	8.3	8.3	33.6	33.6	97.1	97.2	7.3	7.3	7.3	2.5	2.5	2.0	2.8							
	20.8	8.3	33.6	97.1	7.3	2.5	3.5															
	20.8	8.3	33.6	100.7	7.5	1.8	3.6															
G2	Sunny	Calm	14:00	Surface	1.0	20.9	8.3	8.3	33.6	33.6	100.7	100.7	7.5	7.5	7.5	1.8	1.8	1.9	3.6	3.8	4.3	
					20.9	8.3	33.6	100.7	7.5	1.8	4.0											
					20.8	8.3	33.6	100.6	7.5	1.8	3.6											
				Middle	5.2	20.8	8.3	8.3	33.6	33.6	100.6	100.6	7.5	7.5	7.5	1.8	1.8	1.4	3.9			
					20.8	8.3	33.6	100.6	7.5	1.8	4.2											
					20.8	8.3	33.6	99.4	7.4	2.1	5.0											
Bottom	9.2	20.8	8.3	8.3	33.6	33.6	99.4	99.4	7.4	7.4	7.4	2.1	2.1	1.4	3.9							
	20.8	8.3	33.6	99.4	7.4	2.1	5.4															
	20.8	8.3	33.6	99.4	7.4	2.1	5.2															
G3	Sunny	Calm	14:15	Surface	1.1	21.0	8.3	8.3	33.5	33.5	98.2	98.2	7.3	7.3	7.3	1.7	1.7	1.9	4.6	4.3	3.6	
					21.0	8.3	33.5	98.2	7.3	1.7	4.0											
					20.9	8.3	33.6	98.0	7.3	1.9	4.2											
				Middle	4.1	20.9	8.3	8.3	33.6	33.6	98.0	98.0	7.3	7.3	7.3	1.9	1.9	1.4	3.7			
					20.9	8.3	33.6	98.0	7.3	1.9	3.2											
					20.8	8.3	33.6	97.9	7.3	2.0	3.0											
Bottom	6.9	20.8	8.3	8.3	33.6	33.6	97.9	97.9	7.3	7.3	7.3	2.0	2.0	1.4	2.7							
	20.8	8.3	33.6	97.9	7.3	2.0	2.4															
	20.8	8.3	33.6	97.9	7.3	2.0	2.7															
G4	Sunny	Calm	14:23	Surface	1.1	21.0	8.3	8.3	33.5	33.5	98.3	98.3	7.3	7.3	7.3	1.8	1.8	1.9	2.4	2.5	3.0	
					21.0	8.3	33.5	98.3	7.3	1.7	2.6											
					20.9	8.3	33.6	98.0	7.3	1.8	3.0											
				Middle	4.1	20.9	8.3	8.3	33.6	33.6	98.0	98.0	7.3	7.3	7.3	1.8	1.8	1.4	2.8			
					20.9	8.3	33.6	98.0	7.3	1.8	2.5											
					20.8	8.3	33.6	97.9	7.3	2.0	3.2											
Bottom	6.9	20.8	8.3	8.3	33.6	33.6	97.9	97.9	7.3	7.3	7.3	2.0	2.0	1.4	2.7							
	20.8	8.3	33.6	97.9	7.3	2.0	4.0															
	20.8	8.3	33.6	97.9	7.3	2.0	3.6															
M1	Sunny	Calm	14:06	Surface	1.0	21.1	8.3	8.3	33.5	33.5	98.2	98.3	7.3	7.3	7.3	2.1	2.1	2.0	3.6	3.2	3.9	
					21.1	8.3	33.5	98.3	7.3	2.2	2.8											
					20.9	8.3	33.6	97.8	7.3	1.9	4.1											
				Middle	3.1	20.9	8.3	8.3	33.5	33.5	97.8	97.8	7.3	7.3	7.3	2.0	1.9	1.4	4.2			
					20.9	8.3	33.5	97.8	7.3	2.0	4.2											
					20.8	8.3	33.6	97.6	7.3	1.7	4.9											
Bottom	5.1	20.8	8.3	8.3	33.6	33.6	97.6	97.6	7.3	7.3	7.3	1.7	1.7	1.4	4.5							
	20.8	8.3	33.6	97.6	7.3	1.7	4.0															
	20.8	8.3	33.6	97.6	7.3	1.7	4.0															
M2	Sunny	Calm	13:54	Surface	1.1	20.8	8.3	8.3	33.6	33.6	100.3	100.4	7.5	7.5	7.5	1.8	1.8	2.0	3.3	3.4	3.7	
					20.8	8.3	33.6	100.4	7.5	1.8	3.5											
					20.8	8.3	33.6	100.4	7.5	2.0	3.3											
				Middle	6.0	20.8	8.3	8.3	33.6	33.6	100.4	100.4	7.5	7.5	7.5	2.0	2.0	1.4	3.5			
					20.8	8.3	33.6	100.4	7.5	2.0	3.6											
					20.8	8.3	33.6	99.4	7.4	2.3	4.6											
Bottom	11.2	20.8	8.3	8.3	33.6	33.6	99.3	99.4	7.4	7.4	7.4	2.4	2.3	1.4	4.3							
	20.8	8.3	33.6	99.3	7.4	2.4	3.9															
	20.8	8.3	33.6	97.7	7.3	1.9	2.8															
M3	Sunny	Calm	14:19	Surface	1.0	20.9	8.3	8.3	33.6	33.6	97.7	97.7	7.3	7.3	7.3	1.9	1.9	2.0	2.8	2.9	3.2	
					20.9	8.3	33.6	97.7	7.3	1.9	3.0											
					21.0	8.3	33.6	98.1	7.3	1.8	2.9											
				Middle	4.1	21.0	8.3	8.3	33.6	33.6	98.1	98.1	7.3	7.3	7.3	1.8	1.8	1.4	3.2			
					21.0	8.3	33.6	98.1	7.3	1.8	3.5											
					20.8	8.3	33.6	97.6	7.3	2.1	3.8											
Bottom	7.0	20.8	8.3	8.3	33.6	33.6	97.5	97.6	7.3	7.3	7.3	2.1	2.1	1.4	3.6							
	20.8	8.3	33.6	97.5	7.3	2.1	3.4															
	20.8	8.3	33.6	97.5	7.3	2.1	3.6															
M4	Sunny	Calm	13:49	Surface	1.0	20.8	8.3	8.3	33.6	33.6	100.1	100.2	7.5	7.5	7.5	2.0	2.0	2.0	3.9	4.1	3.5	
					20.8	8.3	33.6	100.2	7.5	2.0	4.2											
					20.8	8.3	33.6	99.9	7.5	2.1	3.3											
				Middle	5.1	20.8	8.3	8.3	33.6	33.6	99.9	99.9	7.5	7.5	7.5	2.1	2.1	1.4	3.5			
					20.8	8.3	33.6	99.9	7.5	2.1	3.7											
					20.8	8.3	33.6	99.2	7.4	2.5	2.8											
Bottom	9.0	20.8	8.3	8.3	33.6	33.6	99.2	99.2	7.4	7.4	7.4	2.5	2.5	1.4	2.8							
	20.8	8.3	33.6	99.2	7.4	2.5	2.8															
	20.8	8.3	33.6	100.9	7.6	2.8	4.3															
M5	Sunny	Calm	14:32	Surface	1.1	20.8	8.3	8.3	33.6	33.6	100.9	100.9	7.6	7.6	7.5	2.8	2.8	2.0	4.3	4.8	4.3	
					20.8	8.3	33.6	100.9	7.6	2.8	5.2											
					20.8	8.3	33.6	100.1	7.5	2.0	4.1											
				Middle	6.0	20.8	8.3	8.3	33.6	33.6	100.1	100.1	7.5	7.5	7.5	2.0	2.0	1.4	4.5			
					20.8	8.3	33.6	100.1	7.5	2.0	4.8											
					20.8	8.3	33.6	99.3	7.4	2.6	3.2											
Bottom	11.2	20.8	8.3	8.3	33.6	33.6	99.3	99.3	7.4	7.4	7.4	2.6	2.6	1.4	3.6							
	20.8	8.3	33.6	99.3	7.4	2.6	4.0															
	20.8	8.3	33.6	99.2	7.4	2.6	4.0															
M6	Sunny	Calm	14:27	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3		
					20.8	8.3	33.4	99.3	7.4	2.3	5.0											
					20.8	8.3	33.4	99.3	7.4	2.3	5.6											
				Middle	2.0	20.8	8.3	8.3	33.4	33.4	99.3	99.3	7.4	7.4	7.4	2.3	2.3	1.4	5.3			
					20.8	8.3	33.4	99.3	7.4	2.3	5.6											
					20.8	8.3	33.4	99.3	7.4	2.3	5.6											
Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 22 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 1.7 NTU</u>	<u>C2: 1.8 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 4.6 mg/L</u>	<u>C2: 4.9 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 4.6 mg/L</u>	<u>C2: 4.9 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C2: 3.4 mg/L</u>		<u>C2: 3.6 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 22 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	9:25	Surface	1.1	20.9	20.9	8.3	8.3	33.6	33.6	102.8	102.8	7.7	7.7	7.7	1.3	1.3	1.5	4.4	4.0	3.5
				Middle	9.0	20.9		8.3		33.6		102.2		7.6			7.6			1.4		
				Bottom	17.0	20.8	8.3	33.6	102.3	7.7	7.4	7.4	1.4	1.9	2.8							
C2	Sunny	Calm	8:32	Surface	1.1	20.9	20.9	8.2	8.2	33.6	33.6	103.1	103.1	7.7	7.7	7.6	1.2	1.2	1.4	5.3	5.2	3.8
				Middle	16.0	20.8		8.2		33.6		100.9		7.6			7.6			1.5		
				Bottom	30.7	20.8	8.2	33.6	101.0	7.6	7.5	7.5	1.5	1.5	2.9							
G1	Sunny	Calm	9:00	Surface	1.0	21.1	21.1	8.3	8.3	33.5	33.5	98.3	98.3	7.3	7.3	7.3	1.8	1.8	1.8	3.2	3.1	3.6
				Middle	4.0	20.9		8.3		33.6		97.9		7.3			7.3			1.8		
				Bottom	7.0	20.8	8.3	33.6	97.1	7.3	7.3	2.3	2.4	3.9								
G2	Sunny	Calm	8:49	Surface	1.1	20.9	20.9	8.3	8.3	33.6	33.6	100.7	100.7	7.5	7.5	7.5	1.8	1.7	1.8	4.2	4.0	3.8
				Middle	5.2	20.8		8.3		33.6		100.6		7.5			7.5			1.8		
				Bottom	9.2	20.8	8.3	33.6	99.4	7.4	7.4	2.1	2.1	3.7								
G3	Sunny	Calm	9:04	Surface	1.0	21.0	21.0	8.3	8.3	33.5	33.5	98.1	98.2	7.3	7.3	7.3	1.7	1.7	1.7	4.5	4.3	3.7
				Middle	4.1	20.9		8.3		33.6		98.0		7.3			7.3			1.9		
				Bottom	6.8	20.9	8.3	33.6	98.0	7.3	7.3	2.0	2.0	3.7								
G4	Sunny	Calm	9:12	Surface	1.1	21.0	21.0	8.3	8.3	33.5	33.5	98.3	98.3	7.3	7.3	7.3	1.7	1.7	1.8	4.2	4.5	3.9
				Middle	4.0	20.9		8.3		33.6		98.0		7.3			7.3			1.8		
				Bottom	6.8	20.8	8.3	33.6	98.0	7.3	7.3	2.1	2.1	4.2								
M1	Sunny	Calm	8:55	Surface	1.0	21.1	21.1	8.3	8.3	33.5	33.5	98.2	98.2	7.3	7.3	7.3	2.2	2.1	2.1	3.4	3.7	3.5
				Middle	3.1	20.9		8.3		33.6		97.8		7.3			7.3			2.0		
				Bottom	5.1	20.8	8.3	33.6	97.6	7.3	7.3	1.8	1.8	3.3								
M2	Sunny	Calm	8:43	Surface	1.0	20.8	20.8	8.3	8.3	33.6	33.6	100.4	100.5	7.5	7.5	7.5	1.8	1.8	2.0	5.6	5.5	4.7
				Middle	6.0	20.8		8.3		33.6		100.4		7.5			7.5			2.0		
				Bottom	11.0	20.8	8.3	33.6	99.3	7.4	7.4	2.3	2.3	3.7								
M3	Sunny	Calm	9:07	Surface	1.0	20.9	20.9	8.3	8.3	33.6	33.6	97.8	97.8	7.3	7.3	7.3	2.0	2.0	2.0	3.2	3.5	4.1
				Middle	4.1	21.0		8.3		33.6		98.1		7.3			7.3			1.8		
				Bottom	7.0	20.8	8.3	33.6	97.5	7.3	7.3	2.0	2.0	4.9								
M4	Sunny	Calm	8:37	Surface	1.0	20.8	20.8	8.3	8.3	33.6	33.6	100.0	100.1	7.5	7.5	7.5	2.0	1.9	1.9	2.8	3.1	4.0
				Middle	5.1	20.8		8.3		33.6		99.8		7.5			7.5			2.1		
				Bottom	8.0	20.8	8.3	33.6	99.3	7.4	7.4	2.6	2.5	4.1								
M5	Sunny	Calm	9:21	Surface	1.1	20.8	20.8	8.3	8.3	33.6	33.6	100.9	100.9	7.6	7.6	7.6	2.9	2.9	2.9	4.5	4.8	3.9
				Middle	6.1	20.8		8.3		33.6		100.2		7.5			7.5			2.1		
				Bottom	11.1	20.8	8.3	33.6	99.2	7.4	7.4	2.5	2.5	3.6								
M6	Sunny	Calm	9:16	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.6
				Middle	2.1	20.8	8.3	33.4	99.3	7.4	7.4	8.0	8.0	3.1								
				Bottom	-	-	-	33.4	99.3	7.4	-	-	4.0	-								

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 22 December 2021 (Mid-Flood Tide)

<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>CI: 2.2 NTU</u>	<u>CI: 2.4 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 4.7 mg/L</u>	<u>CI: 5.1 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 4.7 mg/L</u>	<u>CI: 5.1 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>CI: 3.6 mg/L</u>		<u>CI: 3.9 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 24 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Sunny	Calm	15:55	Surface	1.0	21.1	8.2	8.2	32.5	32.5	100.9	101.0	7.7	7.7	7.7	1.6	1.6	1.6	4.7	4.6	3.9		
					21.0	8.2	8.2	32.5	32.5	101.1	101.0	7.7	1.6	1.6	4.5								
					20.9	8.2	8.2	32.5	32.5	100.5	100.5	7.7	1.6	1.6	3.8								
				Middle	9.1	21.3	8.2	8.2	32.5	32.5	100.5	100.5	7.7	7.7	7.7	1.7	1.7	1.6	1.7	1.7		4.0	3.9
					21.7	8.2	8.2	32.5	32.5	100.5	100.5	7.7	1.7	1.7	4.0								
					21.0	8.2	8.2	32.5	32.5	100.0	100.0	7.6	7.6	7.6	3.3								
				Bottom	17.0	21.0	8.2	8.2	32.5	32.5	100.0	100.0	7.6	7.6	7.6	1.6	1.6	1.6	1.6	1.6		3.0	3.2
					21.5	8.3	8.3	32.5	32.5	102.0	102.0	7.8	7.8	7.8	4.8								
					20.9	8.3	8.3	32.5	32.5	102.0	102.0	7.8	7.8	7.8	5.1								
C2	Sunny	Calm	14:10	Surface	1.1	21.2	8.3	8.3	32.5	32.5	102.0	102.0	7.7	7.7	7.7	1.5	1.5	1.5	4.8	5.0	4.2		
					20.9	8.3	8.3	32.5	32.5	101.1	101.1	7.7	1.6	1.6	4.5								
					20.9	8.3	8.3	32.5	32.5	101.1	101.1	7.7	1.6	1.6	4.2								
				Middle	16.6	20.9	8.3	8.3	32.5	32.5	101.1	101.1	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		3.5	3.4
					20.9	8.3	8.3	32.5	32.5	100.6	100.6	7.7	7.7	7.7	3.2								
					20.9	8.3	8.3	32.5	32.5	100.5	100.5	7.7	7.7	7.7	3.2								
				Bottom	32.0	20.9	8.3	8.3	32.5	32.5	100.6	100.6	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		3.5	3.4
					20.9	8.3	8.3	32.5	32.5	100.5	100.5	7.7	7.7	7.7	3.2								
					20.9	8.3	8.3	32.5	32.5	100.5	100.5	7.7	7.7	7.7	3.2								
G1	Sunny	Calm	14:48	Surface	1.1	21.1	8.2	8.2	32.5	32.5	101.3	101.4	7.7	7.7	7.7	1.5	1.5	1.5	3.0	3.2	3.6		
					20.9	8.2	8.2	32.5	32.5	101.4	101.4	7.7	7.7	7.7	3.3								
					20.9	8.2	8.2	32.5	32.5	101.1	101.2	7.7	1.6	1.6	3.4								
				Middle	4.0	20.9	8.2	8.2	32.5	32.5	101.1	101.2	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		3.5	3.5
					20.9	8.2	8.2	32.5	32.5	101.2	101.2	7.7	1.6	1.6	3.6								
					20.8	8.2	8.2	32.5	32.5	100.7	100.7	7.7	1.6	1.6	4.0								
				Bottom	7.1	20.8	8.2	8.2	32.5	32.5	100.6	100.6	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		4.1	4.1
					20.7	8.2	8.2	32.5	32.5	100.6	100.6	7.7	1.6	1.6	4.1								
					20.7	8.2	8.2	32.5	32.5	100.6	100.6	7.7	1.6	1.6	4.1								
G2	Sunny	Calm	14:28	Surface	1.0	21.0	8.2	8.2	32.5	32.5	101.1	101.2	7.7	7.7	7.7	1.5	1.5	1.5	4.4	4.3	5.1		
					20.9	8.2	8.2	32.5	32.5	101.3	101.3	7.7	1.5	1.5	4.1								
					20.9	8.2	8.2	32.5	32.5	101.0	101.1	7.7	1.6	1.6	4.9								
				Middle	5.0	20.9	8.2	8.2	32.5	32.5	101.1	101.1	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		5.3	5.1
					20.9	8.2	8.2	32.5	32.5	101.1	101.1	7.7	1.6	1.6	5.3								
					20.8	8.2	8.2	32.5	32.5	100.7	100.7	7.7	1.7	1.7	5.6								
				Bottom	9.1	20.8	8.2	8.2	32.5	32.5	100.6	100.6	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		6.1	5.9
					20.9	8.2	8.2	32.5	32.5	100.5	100.5	7.7	1.6	1.6	6.1								
					20.9	8.2	8.2	32.5	32.5	100.5	100.5	7.7	1.6	1.6	6.1								
G3	Sunny	Calm	14:55	Surface	1.1	21.1	8.2	8.2	32.5	32.5	101.4	101.4	7.7	7.7	7.7	1.6	1.6	1.6	3.4	3.7	4.2		
					20.9	8.2	8.2	32.5	32.5	101.4	101.4	7.7	1.6	1.6	3.9								
					20.8	8.2	8.2	32.5	32.5	101.2	101.2	7.7	1.6	1.6	4.2								
				Middle	4.1	20.9	8.2	8.2	32.5	32.5	101.2	101.2	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		4.2	4.2
					20.9	8.2	8.2	32.5	32.5	101.2	101.2	7.7	1.6	1.6	4.1								
					20.7	8.2	8.2	32.5	32.5	100.7	100.7	7.7	1.6	1.6	4.8								
				Bottom	7.1	20.8	8.2	8.2	32.5	32.5	100.7	100.7	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		4.6	4.7
					20.8	8.2	8.2	32.5	32.5	100.7	100.7	7.7	1.6	1.6	4.6								
					20.8	8.2	8.2	32.5	32.5	100.7	100.7	7.7	1.6	1.6	4.6								
G4	Sunny	Calm	15:10	Surface	1.1	21.5	8.2	8.2	32.5	32.5	101.3	101.4	7.7	7.7	7.7	1.5	1.6	1.6	4.4	4.3	3.5		
					21.0	8.2	8.2	32.5	32.5	101.4	101.4	7.7	1.6	1.6	4.2								
					21.0	8.2	8.2	32.5	32.5	101.1	101.2	7.7	1.5	1.5	3.4								
				Middle	4.1	21.0	8.2	8.2	32.5	32.5	101.2	101.2	7.7	7.7	7.7	1.5	1.5	1.5	1.5	1.5		3.8	3.6
					21.0	8.2	8.2	32.5	32.5	101.2	101.2	7.7	1.5	1.5	3.8								
					20.9	8.2	8.2	32.5	32.5	100.3	100.3	7.7	1.6	1.6	2.5								
				Bottom	7.0	20.9	8.2	8.2	32.5	32.5	100.3	100.3	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		2.8	2.7
					20.9	8.2	8.2	32.5	32.5	100.3	100.3	7.7	1.6	1.6	2.8								
					20.9	8.2	8.2	32.5	32.5	100.3	100.3	7.7	1.6	1.6	2.8								
M1	Sunny	Calm	14:34	Surface	1.1	21.5	8.2	8.2	32.5	32.5	101.5	101.5	7.7	7.7	7.7	1.6	1.5	1.5	2.8	2.9	3.3		
					21.1	8.2	8.2	32.5	32.5	101.5	101.5	7.7	1.5	1.5	2.9								
					20.9	8.2	8.2	32.5	32.5	101.3	101.4	7.7	1.6	1.6	3.2								
				Middle	3.1	21.0	8.2	8.2	32.5	32.5	101.4	101.4	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		3.2	3.2
					21.0	8.2	8.2	32.5	32.5	101.4	101.4	7.7	1.6	1.6	3.2								
					20.8	8.2	8.2	32.5	32.5	100.9	100.9	7.7	1.6	1.6	4.0								
				Bottom	5.1	20.8	8.2	8.2	32.5	32.5	100.8	100.8	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		3.7	3.9
					20.8	8.2	8.2	32.5	32.5	100.8	100.8	7.7	1.6	1.6	3.7								
					20.8	8.2	8.2	32.5	32.5	100.8	100.8	7.7	1.6	1.6	3.7								
M2	Sunny	Calm	14:22	Surface	1.1	21.1	8.2	8.2	32.5	32.5	101.6	101.6	7.7	7.7	7.7	1.6	1.6	1.6	4.7	4.9	3.6		
					20.9	8.2	8.2	32.5	32.5	101.6	101.6	7.7	1.6	1.6	5.1								
					20.8	8.2	8.2	32.5	32.5	101.1	101.1	7.7	1.6	1.6	3.6								
				Middle	5.5	20.8	8.2	8.2	32.5	32.5	101.1	101.1	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		3.4	3.5
					20.9	8.2	8.2	32.5	32.5	101.1	101.1	7.7	1.6	1.6	3.4								
					20.8	8.2	8.2	32.5	32.5	100.5	100.5	7.7	1.7	1.7	2.3								
				Bottom	10.0	20.8	8.2	8.2	32.5	32.5	100.4	100.5	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		2.5	2.4
					20.8	8.2	8.2	32.5	32.5	100.4	100.4	7.7	1.6	1.6	2.5								
					20.8	8.2	8.2	32.5	32.5	100.4	100.4	7.7	1.6	1.6	2.5								
M3	Sunny	Calm	15:03	Surface	1.1	21.0	8.2	8.2	32.5	32.5	101.3	101.3	7.7	7.7	7.7	1.6	1.6	1.6	4.6	4.4	3.5		
					21.0	8.2	8.2	32.5	32.5	101.3	101.3	7.7	1.6	1.6	4.1								
					20.9	8.2	8.2	32.5	32.5	101.0	101.1	7.7	1.5	1.6	3.4								
				Middle	4.1	20.9	8.2	8.2	32.5	32.5	101.1	101.1	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		3.2	3.3
					20.9	8.2	8.2	32.5	32.5	101.1	101.1	7.7	1.6	1.6	3.2								
					20.7	8.2	8.2	32.5	32.5	100.5	100.5	7.7	1.6	1.6	2.7								
				Bottom	7.0	20.8	8.2	8.2	32.5	32.5	100.4	100.5	7.7	7.7	7.7	1.6	1.6	1.6	1.6	1.6		2.9	2.8
					20.8	8.2	8.2	32.5	32.5	100.4	100.4	7.7	1.6	1.6	2.9								
					20.8	8.2	8.2	32.5	32.5	100.4	100.4	7.7	1.6	1.6	2.9								
M4	Sunny	Calm	14:16	Surface	1.0	21.3	8.2	8.2	32.5	32.5	101.6	101.7	7.7	7.7	7.7	1.5	1.5	1.5	4.0	4.1	3.6		
					21.0	8.2	8.2	32.5	32.5	101.7	101.7	7.7	1.5	1.5	4.2								
					20.9	8.2	8.2</																

Action and Limit Levels for Marine Water Quality on 24 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 1.9 NTU</u>	<u>C2: 2.1 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 5.9 mg/L</u>	<u>C2: 6.4 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 5.9 mg/L</u>	<u>C2: 6.4 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C2: 4.0 mg/L</u>		<u>C2: 4.4 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 24 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	11:48	Surface	1.1	20.2	20.2	8.2	8.2	32.5	32.5	101.2	101.3	7.7	7.7	7.7	1.5	1.5	1.6	4.3	4.4	3.9
					20.2	8.2		32.5		101.3		7.7		1.5								
				Middle	8.5	20.2	8.2	8.2	32.5	32.5	100.6	100.7	7.7	7.7	7.7	1.7	1.7	1.7		3.9	3.9	
					20.2	8.2	32.5	100.8	7.7	1.7												
				Bottom	16.1	20.2	8.2	8.2	32.5	32.5	100.0	100.0	7.6	7.6	7.6	1.7	1.7	1.7		3.5	3.5	
					20.2	8.2	32.5	100.0	7.6	1.7												
C2	Sunny	Calm	10:17	Surface	1.1	20.3	20.3	8.3	8.3	32.5	32.5	102.2	102.2	7.8	7.8	7.8	1.6	1.5	1.6	4.4	4.4	4.1
					20.3	8.3		32.5		102.1		7.8		1.5								
				Middle	16.0	20.2	8.3	8.3	32.5	32.5	101.1	101.2	7.7	7.7	7.7	1.6	1.6	1.6		4.0	4.0	
					20.2	8.3	32.5	101.2	7.7	1.6												
				Bottom	31.0	20.2	8.3	8.3	32.5	32.5	100.8	100.8	7.7	7.7	7.7	1.7	1.7	1.7		3.9	3.8	
					20.2	8.3	32.5	100.7	7.7	1.7												
G1	Sunny	Calm	10:54	Surface	1.1	20.2	20.2	8.2	8.2	32.5	32.5	101.4	101.4	7.7	7.7	7.7	1.5	1.5	1.6	5.5	5.5	4.3
					20.2	8.2		32.5		101.4		7.7		1.5								
				Middle	3.7	20.2	8.2	8.2	32.5	32.5	101.2	101.2	7.7	7.7	7.7	1.6	1.7	1.7		4.1	4.0	
					20.2	8.2	32.5	101.2	7.7	1.7												
				Bottom	6.6	20.2	8.2	8.2	32.5	32.5	100.5	100.5	7.7	7.7	7.7	1.7	1.7	1.7		3.4	3.5	
					20.2	8.2	32.5	100.4	7.7	1.7												
G2	Sunny	Calm	10:37	Surface	1.0	20.3	20.3	8.2	8.2	32.5	32.5	101.5	101.5	7.7	7.7	7.7	1.5	1.5	1.6	3.2	3.3	3.6
					20.3	8.2		32.5		101.5		7.7		1.5								
				Middle	5.1	20.2	8.2	8.2	32.5	32.5	101.1	101.2	7.7	7.7	7.7	1.6	1.5	1.5		3.4	3.4	
					20.2	8.2	32.5	101.2	7.7	1.5												
				Bottom	9.0	20.2	8.2	8.2	32.5	32.5	100.5	100.5	7.7	7.7	7.7	1.6	1.6	1.6		4.2	4.1	
					20.2	8.2	32.5	100.4	7.7	1.6												
G3	Sunny	Calm	11:01	Surface	1.0	20.3	20.3	8.2	8.2	32.5	32.5	101.3	101.4	7.7	7.7	7.7	1.6	1.6	1.6	3.6	3.4	3.7
					20.3	8.2		32.5		101.4		7.7		1.6								
				Middle	3.7	20.2	8.2	8.2	32.5	32.5	101.2	101.2	7.7	7.7	7.7	1.6	1.6	1.6		3.8	3.8	
					20.2	8.2	32.5	101.2	7.7	1.6												
				Bottom	6.6	20.2	8.2	8.2	32.5	32.5	100.9	100.9	7.7	7.7	7.7	1.6	1.6	1.6		4.0	4.0	
					20.2	8.2	32.5	100.8	7.7	1.6												
G4	Sunny	Calm	11:18	Surface	1.1	20.3	20.3	8.2	8.2	32.5	32.5	101.1	101.2	7.7	7.7	7.7	1.5	1.5	1.6	4.0	4.1	3.8
					20.3	8.2		32.5		101.2		7.7		1.6								
				Middle	3.7	20.2	8.2	8.2	32.5	32.5	101.0	101.0	7.7	7.7	7.7	1.6	1.6	1.6		3.8	3.8	
					20.2	8.2	32.5	101.0	7.7	1.5												
				Bottom	6.5	20.2	8.2	8.2	32.5	32.5	100.5	100.5	7.7	7.7	7.7	1.6	1.6	1.6		3.7	3.7	
					20.2	8.2	32.5	100.4	7.7	1.6												
M1	Sunny	Calm	10:43	Surface	1.1	20.3	20.3	8.2	8.2	32.5	32.5	101.5	101.5	7.7	7.7	7.7	1.6	1.6	1.6	4.0	3.9	3.5
					20.3	8.2		32.5		101.5		7.7		1.6								
				Middle	3.1	20.2	8.2	8.2	32.5	32.5	101.2	101.3	7.7	7.7	7.7	1.6	1.6	1.6		3.5	3.5	
					20.2	8.2	32.5	101.3	7.7	1.6												
				Bottom	5.0	20.2	8.2	8.2	32.5	32.5	101.1	101.1	7.7	7.7	7.7	1.7	1.7	1.7		3.2	3.2	
					20.2	8.2	32.5	101.0	7.7	1.7												
M2	Sunny	Calm	10:29	Surface	1.1	20.3	20.3	8.2	8.2	32.5	32.5	101.5	101.5	7.7	7.7	7.7	1.6	1.6	1.6	3.2	3.1	3.4
					20.3	8.2		32.5		101.5		7.7		1.6								
				Middle	5.3	20.2	8.2	8.2	32.5	32.5	101.0	101.0	7.7	7.7	7.7	1.7	1.7	1.7		3.4	3.4	
					20.2	8.2	32.5	101.0	7.7	1.7												
				Bottom	9.5	20.2	8.2	8.2	32.5	32.5	100.7	100.7	7.7	7.7	7.7	1.7	1.7	1.7		3.8	3.8	
					20.2	8.2	32.5	100.6	7.7	1.7												
M3	Sunny	Calm	11:11	Surface	1.0	20.3	20.3	8.2	8.2	32.5	32.5	101.4	101.4	7.7	7.7	7.7	1.5	1.5	1.6	3.3	3.4	3.7
					20.3	8.2		32.5		101.4		7.7		1.5								
				Middle	3.8	20.2	8.2	8.2	32.5	32.5	101.2	101.3	7.7	7.7	7.7	1.6	1.6	1.6		3.5	3.6	
					20.2	8.2	32.5	101.3	7.7	1.5												
				Bottom	6.6	20.2	8.2	8.2	32.5	32.5	100.4	100.4	7.7	7.7	7.7	1.6	1.6	1.6		4.0	4.0	
					20.2	8.2	32.5	100.3	7.7	1.6												
M4	Sunny	Calm	10:24	Surface	1.0	20.3	20.3	8.2	8.2	32.5	32.5	101.7	101.7	7.7	7.7	7.7	1.5	1.5	1.6	3.4	3.3	3.1
					20.3	8.2		32.5		101.7		7.7		1.5								
				Middle	5.1	20.2	8.2	8.2	32.5	32.5	101.0	101.1	7.7	7.7	7.7	1.6	1.6	1.6		3.0	3.1	
					20.2	8.2	32.5	101.1	7.7	1.6												
				Bottom	9.0	20.2	8.2	8.2	32.5	32.5	100.5	100.5	7.7	7.7	7.7	1.6	1.6	1.6		2.8	2.9	
					20.2	8.2	32.5	100.4	7.7	1.6												
M5	Sunny	Calm	11:36	Surface	1.1	20.2	20.2	8.2	8.2	32.5	32.5	101.1	101.1	7.7	7.7	7.7	1.6	1.6	1.6	3.1	3.1	3.6
					20.2	8.2		32.5		101.1		7.7		1.6								
				Middle	5.6	20.2	8.2	8.2	32.5	32.5	100.9	101.0	7.7	7.7	7.7	1.6	1.6	1.6		3.4	3.4	
					20.2	8.2	32.5	101.0	7.7	1.6												
				Bottom	10.0	20.2	8.2	8.2	32.5	32.5	100.7	100.6	7.7	7.7	7.7	1.6	1.6	1.6		4.2	4.4	
					20.2	8.2	32.5	100.5	7.7	1.7												
M6	Sunny	Calm	11:25	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6	-	-	4.3	
					20.2	8.2		32.5		100.9		7.7				8.0						
				Middle	2.0	20.2	8.2	8.2	32.5	32.5	100.9	100.9	7.7	7.7	7.7	8.0	8.0		8.0	4.4		4.3
					20.2	8.2	32.5	100.9	7.7	8.0												
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-
					-	-	-	-	-	-	-											

Remarks: *DA: Depth-Averaged
**Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 24 December 2021 (Mid-Flood Tide)

<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>CI: 2.0 NTU</u>	<u>CI: 2.2 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 5.3 mg/L</u>	<u>CI: 5.7 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>CI: 5.3 mg/L</u>	<u>CI: 5.7 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>CI: 4.2 mg/L</u>		<u>CI: 4.6 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
Water Quality Monitoring Results on 29 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
C1	Sunny	Calm	14:27	Surface	1.0	19.7	8.5	8.4	32.4	32.4	105.9	105.7	8.0	8.0	7.9	1.7	1.4	1.5	2.5	2.3	2.5		
					19.7	8.3	32.4	32.4	105.4	105.7	8.0	7.9	1.1	1.4	2.1								
					19.5	8.5	32.4	32.4	103.0	102.8	7.8	7.8	1.4	1.4	2.6								
				Middle	9.0	19.5	8.4	8.4	32.4	32.4	102.6	102.8	7.8	7.8	7.8	1.5	1.5		2.4	2.5		2.2	
					19.4	8.3	32.4	32.4	101.8	101.8	7.8	7.8	1.5	1.5	2.2								
					19.2	8.4	32.4	32.4	101.7	101.8	7.8	7.8	1.6	1.5	3.0	2.6							
Bottom	17.1	19.2	8.3	8.3	32.4	32.4	103.0	103.0	7.8	7.8	7.8	1.3	1.4	2.8	3.1	2.5	2.6						
	19.7	8.3	32.3	32.3	103.0	103.0	7.8	7.8	1.4	1.4	3.4												
	19.4	8.2	32.3	32.3	100.8	100.6	7.7	7.6	1.8	1.7	2.7												
C2	Sunny	Calm	13:37	Surface	1.0	19.7	8.3	8.3	32.4	32.3	103.0	103.0	7.8	7.8	7.7	1.3	1.4	1.6	2.8	2.5	2.6		
					19.7	8.3	32.3	32.3	103.0	103.0	7.8	7.8	1.4	1.4	3.4								
					19.4	8.2	32.3	32.3	100.8	100.6	7.7	7.6	1.8	1.7	2.7								
				Middle	16.1	19.4	8.2	8.2	32.3	32.3	100.3	100.6	7.6	7.6	7.6	1.6	1.7		2.3	2.5		2.5	2.6
					19.4	8.2	32.3	32.3	100.3	100.6	7.6	7.6	1.6	1.7	2.3								
					19.4	8.3	32.3	32.3	99.3	99.1	7.6	7.5	1.7	1.7	2.0								
Bottom	31.0	19.4	8.3	8.3	32.3	32.3	98.9	99.1	7.5	7.5	7.5	1.6	1.7	2.4	2.2	2.0							
	19.4	8.3	32.3	32.3	99.3	99.1	7.6	7.5	1.7	1.7	2.0												
	19.4	8.3	32.3	32.3	98.9	99.1	7.5	7.5	1.6	1.7	2.4												
G1	Sunny	Calm	14:03	Surface	1.0	19.8	8.6	8.6	32.3	32.3	104.4	104.2	7.9	7.9	7.8	1.5	1.4	1.7	2.1	2.2	2.1		
					19.8	8.5	32.3	32.3	103.9	104.2	7.8	7.9	1.3	1.4	2.5								
					19.7	8.6	32.3	32.3	103.7	103.5	7.8	7.8	1.7	1.8	2.4								
				Middle	4.0	19.6	8.5	8.6	32.3	32.3	103.2	103.5	7.8	7.8	7.8	1.9	1.8		2.0	2.2		2.1	2.1
					19.6	8.5	32.3	32.3	103.2	103.5	7.8	7.8	1.9	1.8	2.0								
					19.5	8.6	32.3	32.3	102.7	102.8	7.8	7.8	1.7	1.8	2.1								
Bottom	7.1	19.5	8.5	8.6	32.3	32.3	102.8	102.8	7.8	7.8	7.8	2.0	1.8	1.7	1.9	2.0	2.1						
	19.5	8.5	32.3	32.3	102.8	102.8	7.8	7.8	2.0	1.8	1.7												
	19.4	8.6	32.3	32.3	102.8	102.8	7.8	7.8	2.0	1.8	1.7												
G2	Sunny	Calm	13:55	Surface	1.0	20.3	8.4	8.4	32.3	32.3	105.8	105.7	7.9	7.9	7.9	1.2		1.2	1.8	2.0	2.6	2.1	
					20.3	8.4	32.3	32.3	105.6	105.7	7.9	7.9	1.3	1.2	2.0								
					19.7	8.4	32.3	32.3	103.7	103.2	7.8	7.8	1.8	2.0	2.5								
				Middle	5.1	19.6	8.5	8.5	32.3	32.3	102.7	103.2	7.8	7.8	7.8	2.3	2.0	2.6		2.6	2.6		2.1
					19.5	8.5	32.3	32.3	102.7	103.2	7.8	7.8	2.3	2.0	2.6								
					19.4	8.6	32.3	32.3	102.2	101.8	7.8	7.7	1.6	2.0	1.8								
Bottom	9.1	19.4	8.6	8.6	32.3	32.3	101.4	101.8	7.7	7.7	7.7	2.4	2.0	1.9	1.9	2.0	2.1						
	19.4	8.6	32.3	32.3	101.4	101.8	7.7	7.7	2.4	2.0	1.9												
	19.4	8.6	32.3	32.3	101.4	101.8	7.7	7.7	2.4	2.0	1.9												
G3	Sunny	Calm	14:06	Surface	1.0	19.8	8.5	8.5	32.3	32.3	104.0	104.1	7.8	7.8	7.8	1.5		2.2	2.2	2.2	2.0	2.0	
					20.0	8.5	32.2	32.3	104.1	104.1	7.8	7.8	2.9	2.2	2.0								
					19.6	8.5	32.4	32.3	102.5	102.9	7.8	7.8	2.8	2.4	2.0								
				Middle	4.0	19.7	8.5	8.5	32.3	32.3	103.2	102.9	7.8	7.8	7.8	2.0	2.4	1.9		2.0	2.0		2.0
					19.7	8.5	32.3	32.3	103.2	102.9	7.8	7.8	2.0	2.4	1.9								
					19.5	8.6	32.4	32.4	102.1	102.2	7.7	7.7	2.1	2.0	1.9								
Bottom	7.1	19.5	8.5	8.5	32.4	32.4	102.3	102.2	7.8	7.7	7.7	2.0	2.0	1.7	1.8	2.0	2.0						
	19.5	8.5	32.4	32.4	102.3	102.2	7.8	7.7	2.0	2.0	1.7												
	19.4	8.5	32.4	32.4	102.3	102.2	7.8	7.7	2.0	2.0	1.7												
G4	Sunny	Calm	14:13	Surface	1.0	20.0	8.5	8.4	32.4	32.4	104.8	104.8	7.9	7.9	7.9	2.0		2.0	1.9	2.1	2.3	2.2	
					20.0	8.4	32.4	32.4	104.7	104.8	7.9	7.9	2.0	2.0	2.5								
					19.6	8.5	32.4	32.4	103.7	104.0	7.9	7.9	1.8	1.6	2.3								
				Middle	4.0	19.8	8.4	8.5	32.4	32.4	104.3	104.0	7.9	7.9	7.9	1.4	1.6	2.2		2.3	2.3		2.2
					19.8	8.4	32.4	32.4	104.3	104.0	7.9	7.9	1.4	1.6	2.2								
					19.4	8.5	32.4	32.4	102.5	102.9	7.8	7.8	2.3	2.1	2.0								
Bottom	7.1	19.5	8.5	8.5	32.4	32.4	103.2	102.9	7.8	7.8	7.8	2.0	2.1	1.8	1.9	2.0	2.2						
	19.5	8.5	32.4	32.4	103.2	102.9	7.8	7.8	2.0	2.1	1.8												
	19.4	8.5	32.4	32.4	102.5	102.9	7.8	7.8	2.3	2.1	2.0												
M1	Sunny	Calm	13:59	Surface	1.1	20.4	8.5	8.5	32.3	32.3	105.6	105.1	7.9	7.9	7.8	1.9		3.2	2.9	1.8	2.1	2.4	
					20.3	8.5	32.3	32.3	104.5	105.1	7.9	7.9	4.6	3.2	2.3								
					20.0	8.5	32.3	32.3	103.9	103.9	7.8	7.8	2.3	2.3	2.5								
				Middle	3.1	20.0	8.5	8.5	32.3	32.3	103.8	103.8	7.8	7.8	7.8	2.3	2.3	2.5		2.5	2.5		2.4
					19.6	8.6	32.3	32.3	102.5	102.5	7.8	7.8	3.4	3.3	2.8								
					19.6	8.5	32.3	32.3	102.4	102.4	7.8	7.8	3.3	3.3	2.4								
Bottom	5.1	19.6	8.6	8.6	32.3	32.3	102.5	102.5	7.8	7.8	7.8	3.4	3.3	2.8	2.6	2.6	2.4						
	19.6	8.5	32.3	32.3	102.4	102.4	7.8	7.8	3.3	3.3	2.4												
	19.4	8.6	32.3	32.3	102.4	102.4	7.8	7.8	3.3	3.3	2.4												
M2	Sunny	Calm	13:51	Surface	1.0	20.0	8.4	8.4	32.3	32.3	105.2	105.1	7.9	7.9	7.9	1.3		1.3	1.7	<0.1	<0.1	1.3	
					20.0	8.4	32.3	32.3	104.9	105.1	7.9	7.9	1.3	1.3	<0.1								
					19.4	8.5	32.3	32.3	102.9	103.4	7.8	7.8	1.4	1.4	1.5								
				Middle	6.1	19.6	8.4	8.5	32.3	32.3	103.8	103.4	7.9	7.8	7.8	1.4	1.4	1.4		1.4	1.3		1.3
					19.6	8.4	32.3	32.3	103.8	103.4	7.9	7.8	1.4	1.4	1.4								
					19.4	8.6	32.3	32.3	101.7	101.7	7.7	7.7	2.0	2.3	2.4								
Bottom	11.0	19.3	8.6	8.6	32.4	32.3	100.5	101.1	7.6	7.7	7.7	2.6	2.3	2.8	2.6	2.6	1.3						
	19.3	8.6	32.4	32.3	100.5	101.1	7.6	7.7	2.6	2.3	2.8												
	19.4	8.6	32.4	32.3	100.5	101.1	7.6	7.7	2.6	2.3	2.8												
M3	Sunny	Calm	14:09	Surface	1.1	20.1	8.4	8.5	32.3	32.3	104.4	104.3	7.8	7.8	7.8	1.3		1.4	1.7	3.0	2.8	2.4	
					20.0	8.5	32.3	32.3	104.2	104.3	7.8	7.8	1.4	1.4	2.5								
					19.7	8.5	32.4	32.4	103.8	103.6	7.9	7.8	1.6	1.7	2.1								
				Middle	4.1	19.7	8.5	8.5	32.4	32.4	103.3	103.6	7.8	7.8	7.8	1.8	1.7	2.2		2.2	2.2		2.4
					19.7	8.5	32.4	32.4	103.3	103.6	7.8	7.8	1.8	1.7	2.2								
					19.5	8.6	32.4	32.4	102.4	102.5	7.8	7.8	2.2	2.1	2.0								
Bottom	7.0	19.6	8.5	8.5	32.4	32.4	102.6	102.5	7.8	7.8	7.8	1.9	2.1	2.4	2.2	2.2	2.4						
	19.6	8.5	32.4	32.4	102.6	102.5	7.8	7.8	1.9	2.1	2.4												
	19.4	8.4	32.4	32.4	102.6	102.5	7.8	7.8	1.9	2.1	2.4												
M4	Sunny	Calm	13:43	Surface	1.0	19.7	8.4	8.4	32.3	32.3	104.6	104.8	7.9	7.9	7.9	1.3		1.3	3.8	2.0	2.2	2.4	
					19.8	8.3	32.3	32.3	104.9	104.8	7.9	7.9	1.3	1.3	2.4								
					19.4	8.4	32.3	32.3	103.0	103.3													

Action and Limit Levels for Marine Water Quality on 29 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 2.0 NTU</u>	<u>C2: 2.2 NTU</u>
	<u>Station M6</u>		
	Intake Level	<u>19.0 NTU</u>	<u>19.4 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 3.7 mg/L</u>	<u>C2: 4.0 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 3.7 mg/L</u>	<u>C2: 4.0 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
<u>C2: 2.6 mg/L</u>		<u>C2: 2.9 mg/L</u>	
<u>Station M6</u>			
Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>	

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 29 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Sunny	Calm	9:00	Surface	1.1	19.5	19.5	8.5	8.4	32.4	32.4	105.1	105.1	8.0	8.0	7.9	1.1	1.2	1.6	2.0	2.0	2.5
					19.5	8.4	32.4	32.4	105.1	105.1	8.0	8.0	7.9	1.3	1.2	2.0	2.0					
				Middle	9.1	19.3	19.2	8.5	8.5	32.4	32.4	103.8	103.6	7.9	7.9	7.9	1.7	1.8	1.6	2.0	2.3	
					19.2	8.5	32.4	32.4	103.3	103.3	7.9	7.9	7.9	1.9	1.8	2.6	2.3					
				Bottom	17.1	19.2	19.2	8.6	8.5	32.4	32.4	102.6	102.7	7.8	7.8	7.8	2.0	1.9	1.6	3.4	3.1	
					19.2	8.5	32.4	32.4	102.7	102.7	7.8	7.8	7.8	1.9	1.7	2.7	2.3					
C2	Sunny	Calm	7:59	Surface	1.0	19.5	19.5	8.3	8.3	32.4	32.4	103.7	103.5	7.9	7.9	7.8	1.6	1.6	1.7	2.6	2.3	2.7
					19.5	8.3	32.4	32.4	103.3	103.3	7.8	7.8	7.8	1.7	1.6	2.0	2.3					
				Middle	16.1	19.4	19.4	8.2	8.2	32.4	32.4	102.5	103.1	7.8	7.8	7.8	1.7	1.7	1.7	2.8	2.8	
					19.5	8.2	32.4	32.4	103.6	103.6	7.9	7.8	7.8	1.7	1.7	2.7	2.8					
				Bottom	31.0	19.4	19.4	8.3	8.3	32.4	32.4	102.0	102.8	7.8	7.8	7.8	1.8	1.7	1.6	3.3	3.1	
					19.5	8.3	32.4	32.4	103.6	103.6	7.9	7.8	7.8	1.6	1.7	3.3	3.1					
G1	Sunny	Calm	8:32	Surface	1.0	19.5	19.6	8.4	8.4	32.3	32.3	103.8	103.5	7.9	7.8	7.8	1.7	1.7	2.1	1.9	2.2	
					19.6	8.4	32.3	32.3	103.2	103.5	7.8	7.8	7.8	1.6	1.7	1.8	1.9					
				Middle	4.2	19.4	19.4	8.4	8.4	32.3	32.3	102.7	102.7	7.8	7.8	7.8	2.0	2.0	2.1	2.3		
					19.4	8.4	32.3	32.3	102.6	102.7	7.8	7.8	7.8	1.9	2.0	2.1	2.3					
				Bottom	7.2	19.4	19.4	8.4	8.4	32.4	32.4	102.6	102.5	7.8	7.8	7.8	2.4	2.7	2.4	2.6		
					19.4	8.4	32.4	32.4	102.3	102.5	7.8	7.8	7.8	2.9	2.7	2.7	2.6					
G2	Sunny	Calm	8:21	Surface	1.0	19.5	19.5	8.4	8.4	32.4	32.4	103.7	103.5	7.9	7.9	7.8	1.6	1.5	1.6	2.5	2.7	2.4
					19.5	8.4	32.4	32.4	103.3	103.3	7.8	7.8	7.8	1.5	1.5	2.8	2.7					
				Middle	5.1	19.4	19.4	8.4	8.4	32.4	32.4	103.3	103.3	7.9	7.8	7.8	1.4	1.4	1.4	2.5	2.5	
					19.4	8.4	32.4	32.4	103.2	103.3	7.8	7.8	7.8	1.4	1.4	2.4	2.5					
				Bottom	9.1	19.3	19.3	8.4	8.4	32.4	32.4	101.8	102.1	7.7	7.8	7.8	1.8	1.8	1.8	2.2	2.2	
					19.3	8.4	32.4	32.4	102.3	102.1	7.8	7.8	7.8	1.9	1.8	2.2	2.2					
G3	Sunny	Calm	8:36	Surface	1.2	19.7	19.7	8.4	8.4	32.2	32.3	102.6	102.7	7.8	7.8	7.8	1.6	1.6	1.6	2.4	2.5	2.3
					19.6	8.4	32.3	32.3	102.7	102.7	7.8	7.8	7.8	1.6	1.6	2.6	2.5					
				Middle	4.2	19.5	19.5	8.4	8.4	32.4	32.4	102.2	102.2	7.8	7.7	7.7	1.9	1.9	1.9	2.2	2.4	
					19.5	8.4	32.4	32.4	102.1	102.2	7.7	7.7	7.7	1.8	1.9	2.5	2.4					
				Bottom	7.2	19.4	19.4	8.4	8.4	32.4	32.4	100.4	100.8	7.6	7.6	7.6	2.1	2.1	2.1	2.0		
					19.5	8.4	32.4	32.4	101.1	100.8	7.7	7.6	7.6	2.1	2.1	2.1	2.0					
G4	Sunny	Calm	8:43	Surface	1.0	19.6	19.5	8.4	8.4	32.4	32.4	103.6	102.9	7.9	7.8	7.8	2.1	2.1	2.1	2.2	2.0	
					19.5	8.4	32.4	32.4	102.1	102.9	7.8	7.8	7.8	2.1	2.1	2.1	2.2					
				Middle	4.1	19.4	19.5	8.4	8.4	32.4	32.4	102.0	102.0	7.7	7.7	7.7	2.1	2.0	2.0	2.1		
					19.5	8.4	32.4	32.4	102.0	102.0	7.7	7.7	7.7	2.0	2.0	1.9	2.1					
				Bottom	7.1	19.3	19.4	8.4	8.4	32.4	32.4	101.5	101.7	7.7	7.7	7.7	2.4	2.2	2.4	1.9		
					19.4	8.4	32.4	32.4	101.9	101.7	7.7	7.7	7.7	2.0	2.2	2.0	1.9					
M1	Sunny	Calm	8:27	Surface	1.0	19.6	19.6	8.4	8.4	32.4	32.4	102.4	102.2	7.8	7.7	7.7	2.8	2.8	2.8	2.2	2.4	
					19.6	8.4	32.4	32.4	101.9	102.2	7.7	7.7	7.7	2.8	2.8	2.2	2.2					
				Middle	3.0	19.5	19.5	8.4	8.4	32.4	32.4	101.7	101.6	7.7	7.7	7.7	2.9	2.9	2.9	2.4		
					19.5	8.4	32.4	32.4	101.5	101.6	7.7	7.7	7.7	2.9	2.9	2.5	2.5					
				Bottom	5.0	19.5	19.5	8.4	8.4	32.4	32.4	101.5	101.5	7.7	7.7	7.7	2.6	2.8	2.6	2.6		
					19.5	8.4	32.4	32.4	101.4	101.5	7.7	7.7	7.7	2.9	2.8	2.6	2.6					
M2	Sunny	Calm	8:15	Surface	1.1	19.6	19.5	8.5	8.4	32.3	32.3	104.3	104.1	7.9	7.9	7.9	1.5	1.4	1.7	2.7	2.5	
					19.5	8.4	32.4	32.3	103.8	104.1	7.9	7.9	7.9	1.4	1.4	2.9	2.8					
				Middle	6.1	19.4	19.4	8.5	8.4	32.4	32.4	103.1	103.0	7.8	7.8	7.8	1.6	1.7	1.6	2.3		
					19.4	8.4	32.4	32.4	102.8	103.0	7.8	7.8	7.8	1.8	1.7	2.8	2.6					
				Bottom	11.1	19.3	19.3	8.5	8.4	32.4	32.4	101.6	101.5	7.7	7.7	7.7	1.9	1.9	1.9	2.2		
					19.3	8.4	32.4	32.4	101.4	101.5	7.7	7.7	7.7	1.9	1.9	2.2	2.2					
M3	Sunny	Calm	8:39	Surface	1.1	19.8	19.7	8.3	8.4	32.1	32.3	101.1	101.2	7.6	7.7	7.7	1.4	1.8	2.4	2.1	1.9	
					19.6	8.4	32.4	32.4	101.3	101.8	7.7	7.7	7.7	2.2	2.1	2.5	1.7					
				Middle	4.2	19.6	19.6	8.4	8.4	32.4	32.4	102.3	101.8	7.7	7.7	7.7	1.8	2.1	1.8	1.7		
					19.6	8.4	32.4	32.4	102.3	101.8	7.7	7.7	7.7	1.8	2.1	1.5	1.7					
				Bottom	7.1	19.4	19.4	8.4	8.4	32.4	32.4	99.9	100.5	7.6	7.6	7.6	3.5	3.3	3.5	1.7		
					19.5	8.4	32.4	32.4	101.0	100.5	7.7	7.6	7.6	3.0	3.3	1.9	1.7					
M4	Sunny	Calm	8:01	Surface	1.1	19.5	19.5	8.3	8.4	32.4	32.3	103.6	103.8	7.9	7.9	7.8	1.7	1.5	1.6	2.1	2.1	
					19.6	8.4	32.3	32.3	104.0	103.8	7.9	7.9	7.8	1.4	1.5	1.8	2.0					
				Middle	5.1	19.4	19.4	8.4	8.5	32.4	32.4	102.5	102.8	7.8	7.8	7.8	1.6	1.7	1.6	1.9		
					19.4	8.5	32.4	32.4	103.0	102.8	7.8	7.8	7.8	1.8	1.7	2.3	2.1					
				Bottom	8.9	19.3	19.4	8.5	8.5	32.4	32.4	101.8	102.4	7.7	7.8	7.8	1.6	1.6	1.6	2.4		
					19.4	8.5	32.4	32.4	103.0	102.4	7.8	7.8	7.8	1.6	1.6	2.3	2.4					
M5	Sunny	Calm	8:54	Surface	1.1	19.6	19.6	8.3	8.3	32.4	32.4	103.6	103.4	7.9	7.8	7.8	1.3	1.4	1.7	1.9	2.0	
					19.6	8.3	32.4	32.4	103.2	103.4	7.8	7.8	7.8	1.4	1.4	2.0	1.9					
				Middle	6.1	19.3	19.3	8.4	8.4	32.4	32.4	102.4	102.4	7.8	7.8	7.8	1.7	1.8	1.7	1.8		
					19.3	8.4	32.4	32.4	102.4	102.4	7.8	7.8	7.8	1.9	1.8	2.0	1.8					
				Bottom	11.1	19.3	19.3	8.4	8.4	32.4	32.4	101.8	102.4	7.8	7.8	7.8	1.9	1.8	1.9	2.6		
					19.2	8.4	32.4	32.4	103.0	102.4	7.9	7.8	7.8	1.8	1.8	2.0	2.3					
M6	Sunny	Calm	8:49	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1		
					-	-	-	-	-	-	-	-	-	-	-	-	-	-				
				Middle	2.1	19.5	19.5	8.4	8.4	32.3	32.3	103.2	103.2	7.8	7.8	7.8	8.0	8.0	3.3		2.2	
					19.5	8.4	32.4	32.3	103.2	103.2	7.8	7.8	7.8	8.0	8.0	2.0	2.1					
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 29 December 2021 (Mid-Flood Tide)

<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C1: 2.3 NTU</u>	<u>C1: 2.5 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 2.4 mg/L</u>	<u>C1: 2.6 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 2.4 mg/L</u>	<u>C1: 2.6 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C1: 3.7 mg/L</u>		<u>C1: 4.0 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 31 December 2021

(Mid-Ebb Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	11:17	Surface	1.0	19.8	8.3	8.3	32.3	32.3	104.8	104.4	8.1	8.1	8.0	1.5	1.6	1.8	3.2	3.4	3.9	
					19.8	8.3	32.3	32.3	103.9	104.1	8.0	8.0	8.0	1.7	2.0	1.8	3.5	1.8				
					19.8	8.3	32.3	32.3	103.9	104.1	8.0	8.0	8.0	1.5	2.0	1.8	4.0					
				Middle	8.6	19.9	8.3	8.3	32.3	32.3	104.3	104.1	8.0	8.0	8.1	1.8	1.8	1.8	3.5	1.5		3.8
					19.9	8.3	32.3	32.3	104.7	104.4	8.1	8.1	8.1	2.5	1.8	4.2						
					19.9	8.3	32.3	32.3	104.7	104.4	8.1	8.1	8.1	1.8	1.8	4.8						
				Bottom	16.1	19.7	8.3	8.3	32.3	32.3	104.0	104.4	8.1	8.1	8.1	1.8	1.8	1.8	4.8	1.5		4.5
					19.6	8.3	32.3	32.3	105.2	104.9	8.1	8.1	8.1	1.7	1.7	4.7						
					19.9	8.3	32.3	32.3	104.5	104.9	8.1	8.1	8.1	1.7	1.7	4.9						
C2	Cloudy	Moderate	9:45	Surface	1.0	19.9	8.3	8.3	32.3	32.3	105.2	104.9	8.1	8.1	8.0	1.7	1.7	1.7	4.7	4.8	4.2	
					19.9	8.3	32.3	32.3	102.8	102.8	7.9	7.9	7.9	1.5	1.5	1.5	3.8					
					19.8	8.3	32.3	32.3	102.8	102.8	7.9	7.9	7.9	1.5	1.5	1.5	4.3					
				Middle	16.0	19.8	8.3	8.3	32.3	32.3	102.8	102.8	7.9	7.9	7.9	1.4	1.4	1.4	4.0	1.5		4.1
					19.8	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.4	1.4	4.0						
					19.8	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.4	1.4	3.4						
				Bottom	31.0	19.8	8.3	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.4	1.4	1.4	4.0	1.5		3.7
					19.8	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.4	1.4	3.4						
					19.8	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.4	1.4	3.7						
G1	Cloudy	Moderate	10:27	Surface	1.0	19.9	8.3	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.6	1.6	1.6	3.8	3.7	3.8	
					19.9	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.6	1.6	3.5						
					19.9	8.3	32.3	32.3	102.7	102.8	7.9	7.9	7.9	1.7	1.7	4.0						
				Middle	3.7	19.9	8.3	8.3	32.3	32.3	102.7	102.8	7.9	7.9	7.9	1.7	1.7	1.7	4.0	1.6		3.7
					19.9	8.3	32.3	32.3	102.8	102.8	7.9	7.9	7.9	1.7	1.7	3.4						
					19.9	8.3	32.3	32.3	102.8	102.8	7.9	7.9	7.9	1.7	1.7	4.2						
				Bottom	6.5	19.9	8.3	8.3	32.3	32.3	102.4	102.4	7.9	7.9	7.9	1.5	1.5	1.5	4.1	1.5		4.2
					19.9	8.3	32.3	32.3	102.4	102.4	7.9	7.9	7.9	1.5	1.5	4.1						
					19.9	8.3	32.3	32.3	102.4	102.4	7.9	7.9	7.9	1.5	1.5	3.7						
G2	Cloudy	Moderate	10:07	Surface	1.1	20.0	8.3	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.6	1.6	1.6	3.7	3.5	3.9	
					20.0	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.6	1.6	3.3						
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	4.0						
				Middle	5.0	19.9	8.3	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	1.5	4.0	1.5		4.0
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	3.9						
					19.9	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.5	1.5	4.0						
				Bottom	9.1	19.9	8.3	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.4	1.5	1.5	4.2	1.5		4.1
					19.9	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.4	1.5	4.2						
					19.9	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.5	1.5	3.2						
G3	Cloudy	Moderate	10:35	Surface	1.0	19.9	8.3	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.5	1.5	1.5	3.2	3.5	3.6	
					19.9	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.5	1.5	3.7						
					19.9	8.3	32.3	32.3	102.7	102.7	7.9	7.9	7.9	1.5	1.5	3.6						
				Middle	3.7	19.9	8.3	8.3	32.3	32.3	102.7	102.7	7.9	7.9	7.9	1.6	1.5	1.5	3.6	1.5		3.6
					19.9	8.3	32.3	32.3	102.7	102.7	7.9	7.9	7.9	1.6	1.5	3.6						
					19.9	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.5	1.6	3.6						
				Bottom	6.5	19.9	8.3	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.5	1.6	1.6	3.6	1.5		3.8
					19.9	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.6	1.6	4.0						
					19.9	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.6	1.6	3.8						
G4	Cloudy	Moderate	10:49	Surface	1.0	19.9	8.3	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.5	1.5	1.5	3.2	3.6	2.9	
					19.9	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.5	1.5	4.0						
					19.9	8.3	32.3	32.3	102.7	102.7	7.9	7.9	7.9	1.5	1.5	3.2						
				Middle	3.8	19.9	8.3	8.3	32.3	32.3	102.7	102.7	7.9	7.9	7.9	1.5	1.5	1.5	3.0	1.5		3.1
					19.9	8.3	32.3	32.3	102.7	102.7	7.9	7.9	7.9	1.5	1.5	3.0						
					19.9	8.3	32.3	32.3	102.7	102.7	7.9	7.9	7.9	1.5	1.5	3.1						
				Bottom	6.6	19.9	8.3	8.3	32.3	32.3	102.4	102.4	7.9	7.9	7.9	1.6	1.6	1.6	1.8	1.5		1.9
					19.9	8.3	32.3	32.3	102.4	102.4	7.9	7.9	7.9	1.6	1.6	2.0						
					19.9	8.3	32.3	32.3	102.4	102.4	7.9	7.9	7.9	1.6	1.6	2.0						
M1	Cloudy	Moderate	10:14	Surface	1.0	19.9	8.3	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.5	1.5	1.5	2.0	2.2	2.5	
					19.9	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.5	1.5	2.4						
					19.9	8.3	32.3	32.3	102.8	102.8	7.9	7.9	7.9	1.5	1.5	2.9						
				Middle	3.0	19.9	8.3	8.3	32.3	32.3	102.8	102.8	7.9	7.9	7.9	1.6	1.5	1.5	2.3	1.6		2.6
					19.9	8.3	32.3	32.3	102.8	102.8	7.9	7.9	7.9	1.6	1.5	2.6						
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.7	1.7	2.5						
				Bottom	5.1	19.9	8.3	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.7	1.7	1.7	2.6	1.6		2.6
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.7	1.7	2.6						
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.7	1.7	2.6						
M2	Cloudy	Moderate	9:59	Surface	1.0	20.0	8.3	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.7	1.7	1.7	2.9	3.0	2.6	
					20.0	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.7	1.7	3.1						
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	2.2						
				Middle	5.3	19.9	8.3	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	1.5	2.9	1.6		2.6
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	2.9						
					19.9	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.6	1.6	2.4						
				Bottom	9.5	19.9	8.3	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.6	1.6	1.6	2.0	1.6		2.2
					19.9	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.6	1.6	2.0						
					19.9	8.3	32.3	32.3	102.5	102.5	7.9	7.9	7.9	1.6	1.6	2.0						
M3	Cloudy	Moderate	10:43	Surface	1.0	19.9	8.3	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.5	1.5	1.5	3.0	3.3	2.9	
					19.9	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.5	1.5	3.5						
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	2.8						
				Middle	3.7	19.9	8.3	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	1.5	2.9	1.5		2.9
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	2.9						
					19.9	8.3	32.3	32.3	102.6	102.6	7.9	7.9	7.9	1.5	1.5	2.9						
				Bottom	6.6	19.9	8.3	8.3	32.3	32.3	102.4	102.4	7.9	7.9	7.9	1.6	1.6	1.6	2.7	1.5		2.6
					19.9	8.3	32.3	32.3	102.4	102.4	7.9	7.9	7.9	1.6	1.6	2.4						
					19.9	8.3</																

Action and Limit Levels for Marine Water Quality on 31 December 2021 (Mid-Ebb Tide)

Parameter (unit)	Depth	Action Level	Limit Level
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C2: 1.7 NTU</u>	<u>C2: 1.8 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 5.8 mg/L</u>	<u>C2: 6.2 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C2: 5.8 mg/L</u>	<u>C2: 6.2 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C2: 4.4 mg/L</u>		<u>C2: 4.8 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 Water Quality Monitoring Results on 31 December 2021

(Mid-Flood Tide)

Location	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
C1	Cloudy	Moderate	16:32	Surface	1.1	21.1	8.3	8.3	32.3	32.3	103.7	106.3	8.0	8.2	8.1	2.4	2.0	1.8	4.0	3.9	4.1	
					21.0	8.3	32.3	32.3	108.9	8.4	1.5	3.7	1.8	4.2	4.1							
					21.4	8.3	32.3	32.3	105.4	8.2	1.4	4.0										
C2	Cloudy	Moderate	14:45	Surface	1.0	21.0	8.0	8.0	32.3	32.3	104.1	104.0	8.0	8.0	8.0	1.8	1.8	1.8	3.8	3.9	4.6	
					20.9	8.0	32.3	32.3	103.8	8.0	1.7	4.0	1.6	3.8	4.2							
					20.9	8.2	32.3	32.3	102.7	7.9	1.4	4.5										
G1	Cloudy	Moderate	15:25	Surface	1.0	21.4	8.3	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.6	1.6	1.6	4.9	5.2	4.9	
					20.9	8.3	32.3	32.3	103.0	7.9	1.6	5.4	1.6	5.0	5.0							
					20.9	8.3	32.3	32.3	102.7	7.9	1.6	4.9										
G2	Cloudy	Moderate	15:07	Surface	1.0	21.4	8.3	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.6	1.6	1.6	4.2	4.0	4.2	
					20.9	8.3	32.3	32.3	103.0	7.9	1.6	3.7	1.6	4.5	4.3							
					20.9	8.3	32.3	32.3	102.7	7.9	1.5	4.0										
G3	Cloudy	Moderate	15:33	Surface	1.0	21.1	8.3	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.4	1.4	1.4	5.6	5.4	5.3	
					20.9	8.3	32.3	32.3	103.0	7.9	1.4	5.1	1.6	5.5	5.4							
					20.9	8.3	32.3	32.3	102.7	7.9	1.6	5.3										
G4	Cloudy	Moderate	15:47	Surface	1.1	21.2	8.3	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.5	1.5	1.5	8.3	8.4	6.0	
					21.0	8.3	32.3	32.3	102.9	7.9	1.5	6.3	1.5	5.2	5.8							
					20.9	8.3	32.3	32.3	102.7	7.9	1.5	5.2										
M1	Cloudy	Moderate	15:12	Surface	1.1	21.2	8.3	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.5	1.5	1.5	4.0	4.1	3.7	
					21.1	8.3	32.3	32.3	103.0	7.9	1.5	4.1	1.6	3.9	3.7							
					20.9	8.3	32.3	32.3	102.9	7.9	1.5	3.5										
M2	Cloudy	Moderate	14:59	Surface	1.0	21.1	8.3	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.6	1.6	1.6	3.0	3.5	3.1	
					20.9	8.3	32.3	32.3	102.9	7.9	1.5	4.0	1.6	2.8	3.2							
					20.8	8.3	32.3	32.3	102.5	7.9	1.7	3.5										
M3	Cloudy	Moderate	15:41	Surface	1.1	21.2	8.3	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.5	1.5	1.5	2.1	2.4	2.9	
					21.0	8.3	32.3	32.3	102.9	7.9	1.5	2.6	1.6	2.8	3.2							
					20.9	8.3	32.3	32.3	102.6	7.9	1.5	3.5										
M4	Cloudy	Moderate	14:53	Surface	1.0	21.4	8.3	8.3	32.3	32.3	103.0	103.0	7.9	7.9	7.9	1.6	1.6	1.6	3.3	3.4	3.0	
					21.0	8.3	32.3	32.3	103.0	7.9	1.6	3.5	1.6	3.1	3.1							
					20.9	8.2	32.3	32.3	102.5	7.9	1.6	3.0										
M5	Cloudy	Moderate	16:21	Surface	1.0	21.0	8.3	8.3	32.3	32.3	102.9	102.9	7.9	7.9	7.9	1.7	1.7	1.7	4.1	3.9	3.2	
					21.0	8.3	32.3	32.3	102.9	7.9	1.7	3.7	1.6	3.0	3.3							
					20.9	8.3	32.3	32.3	102.5	7.9	1.5	3.5										
M6	Cloudy	Moderate	16:01	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8		
					2.2	21.4	8.3	8.3	32.3	32.3	106.9	105.6	8.3	8.2	8.2	8.0	8.0	2.2	2.7		2.8	
					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Action and Limit Levels for Marine Water Quality on 31 December 2021 (Mid-Flood Tide)

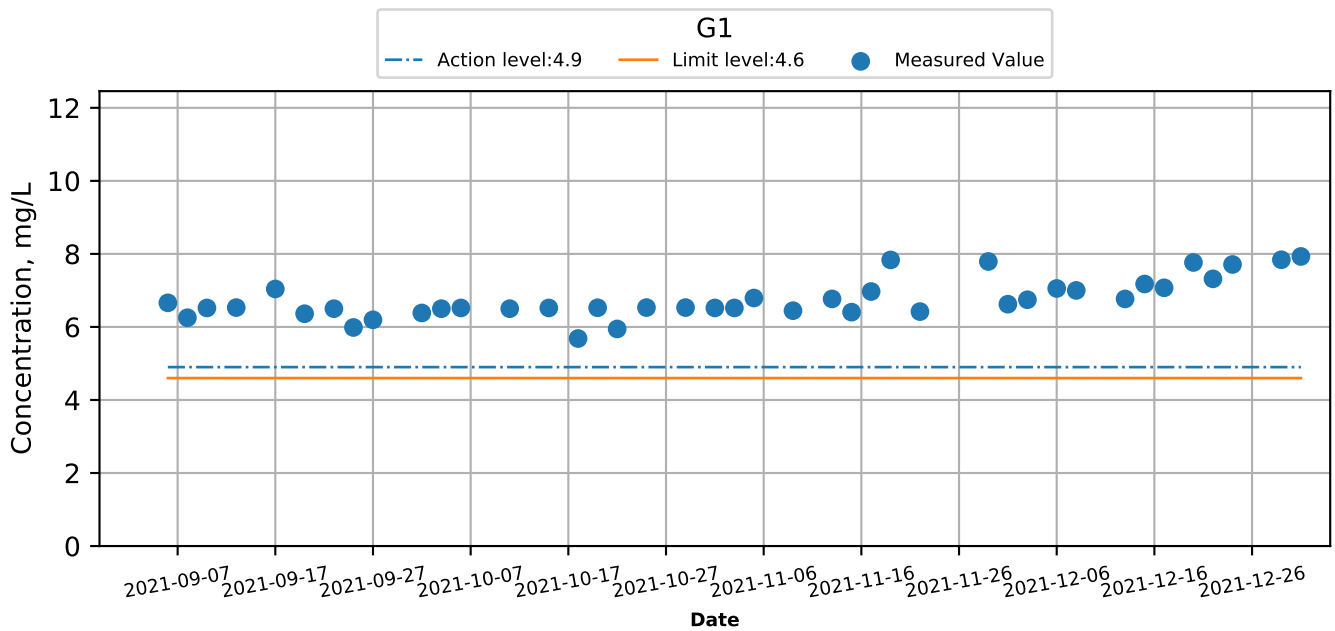
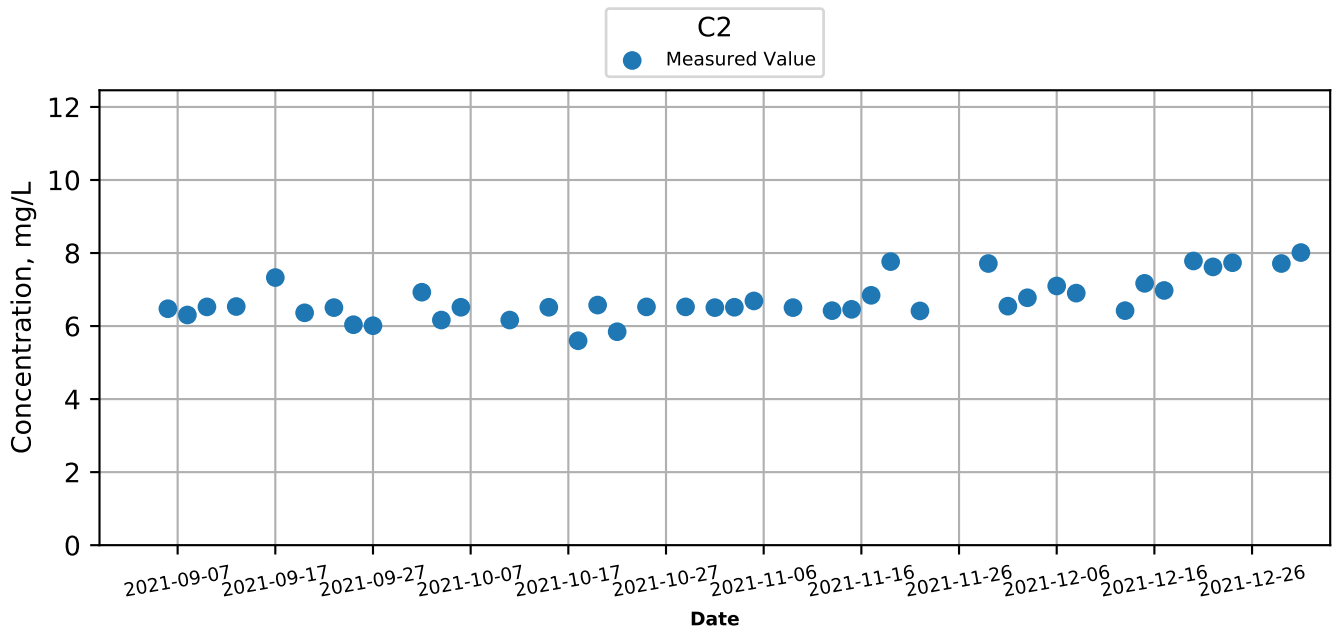
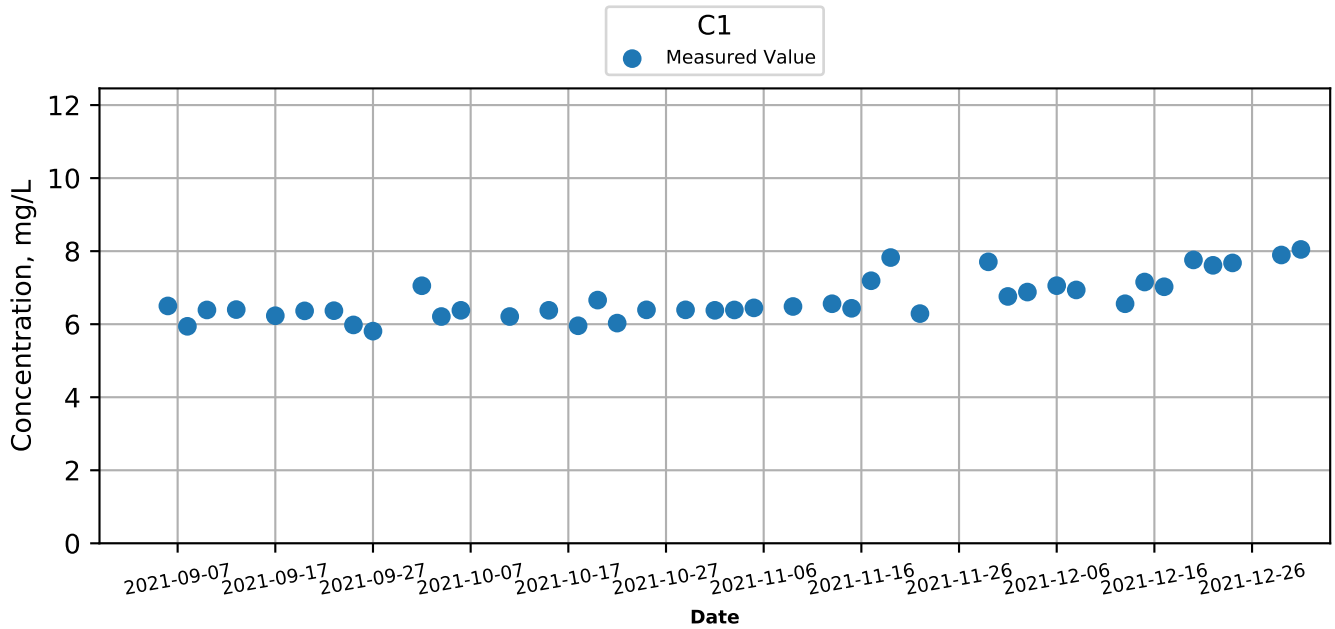
<u>Parameter (unit)</u>	<u>Depth</u>	<u>Action Level</u>	<u>Limit Level</u>
DO in mg/L (See Note 1 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Depth Average	<u>4.9 mg/L</u>	<u>4.6 mg/L</u>
	Bottom	<u>4.2 mg/L</u>	<u>3.6 mg/L</u>
	<u>Station M6</u>		
	Intake Level	<u>5.0 mg/L</u>	<u>4.7 mg/L</u>
Turbidity in NTU (See Note 2 and 4)	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>19.3 NTU</u>	<u>22.2 NTU</u>
		or 120% of upstream control station's Turbidity at the same tide of the same day	or 130% of upstream control station's Turbidity at the same tide of the same day
		<u>C1: 2.0 NTU</u>	<u>C1: 2.2 NTU</u>
	<u>Station M6</u>		
		Intake Level	<u>19.0 NTU</u>
SS in mg/L (See Note 2 and 4)	<u>Stations G1-G4</u>		
	Surface	<u>6.0 mg/L</u>	<u>6.9 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 4.6 mg/L</u>	<u>C1: 5.0 mg/L</u>
	<u>Stations M1-M5</u>		
	Surface	<u>6.2 mg/L</u>	<u>7.4 mg/L</u>
		or 120% of upstream control station's SS at the same tide of the same day	or 130% of upstream control station's SS at the same tide of the same day
		<u>C1: 4.6 mg/L</u>	<u>C1: 5.0 mg/L</u>
	<u>Stations G1-G4, M1-M5</u>		
	Bottom	<u>6.9 mg/L</u>	<u>7.9 mg/L</u>
or 120% of upstream control station's SS at the same tide of the same day		or 130% of upstream control station's SS at the same tide of the same day	
<u>C1: 5.3 mg/L</u>		<u>C1: 5.8 mg/L</u>	
<u>Station M6</u>			
	Intake Level	<u>8.3 mg/L</u>	<u>8.6 mg/L</u>

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. For turbidity, SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
3. All the figures given in the table are used for reference only and EPD may amend the figures whenever it is considered as necessary.
4. Action and limit values are derived based on baseline water quality monitoring results to show the actual baseline water quality condition.

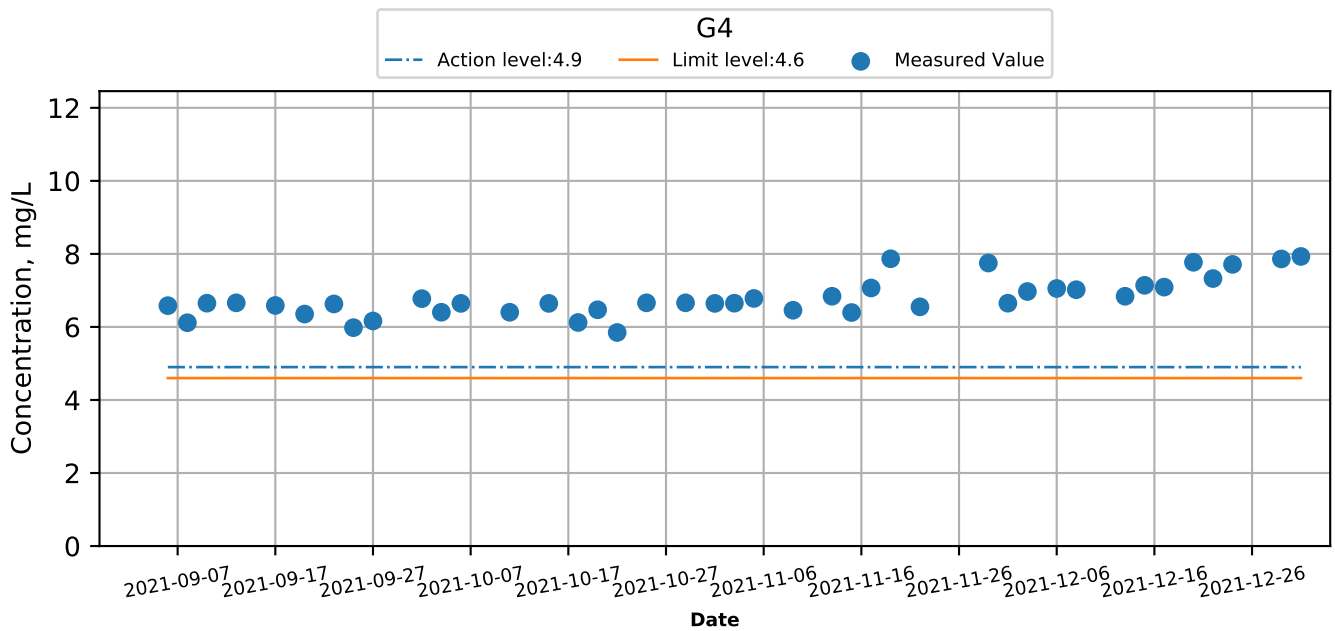
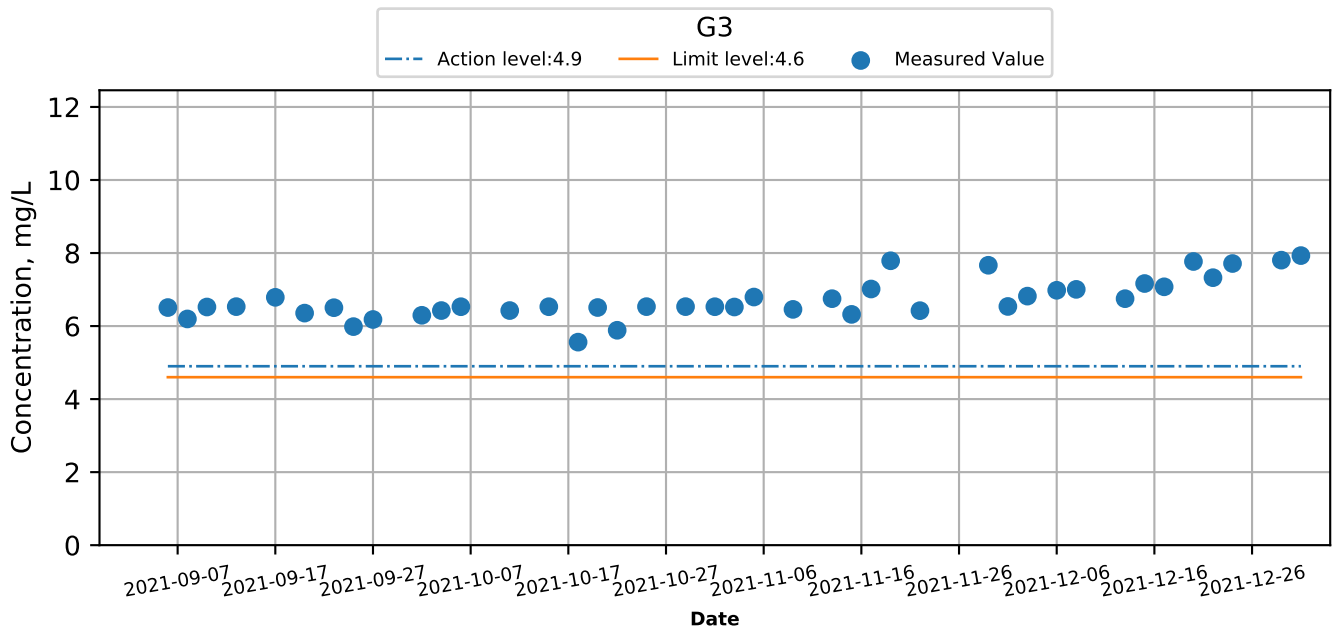
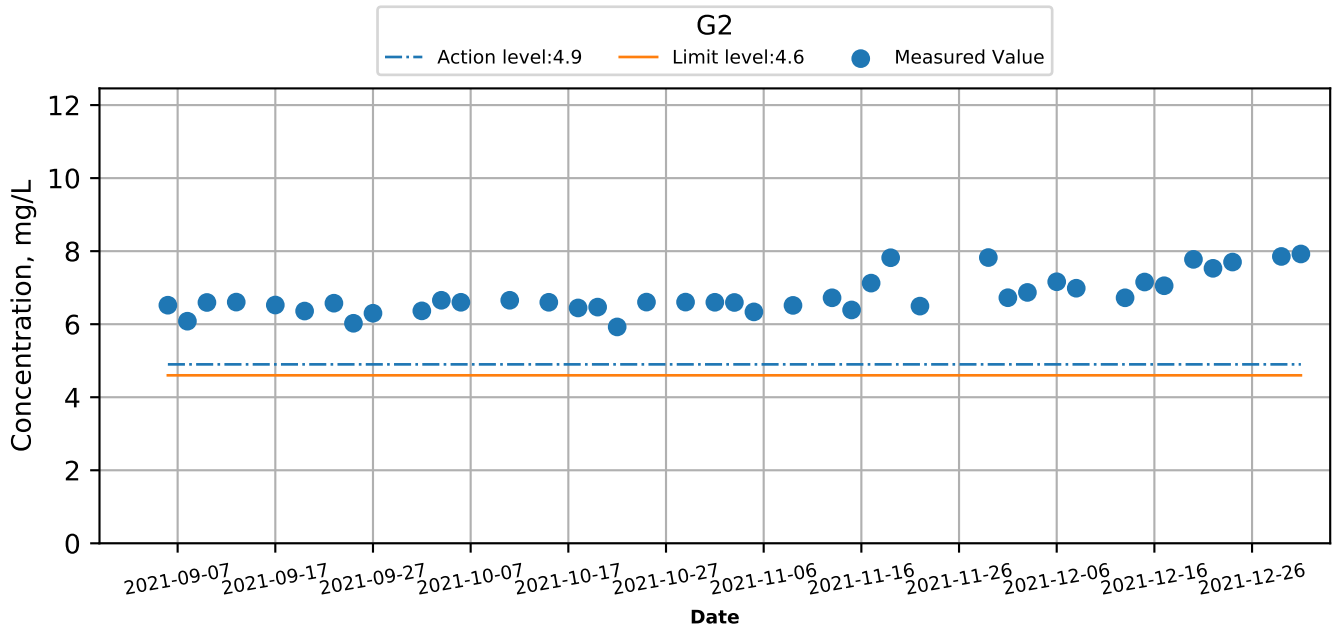
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Ebb



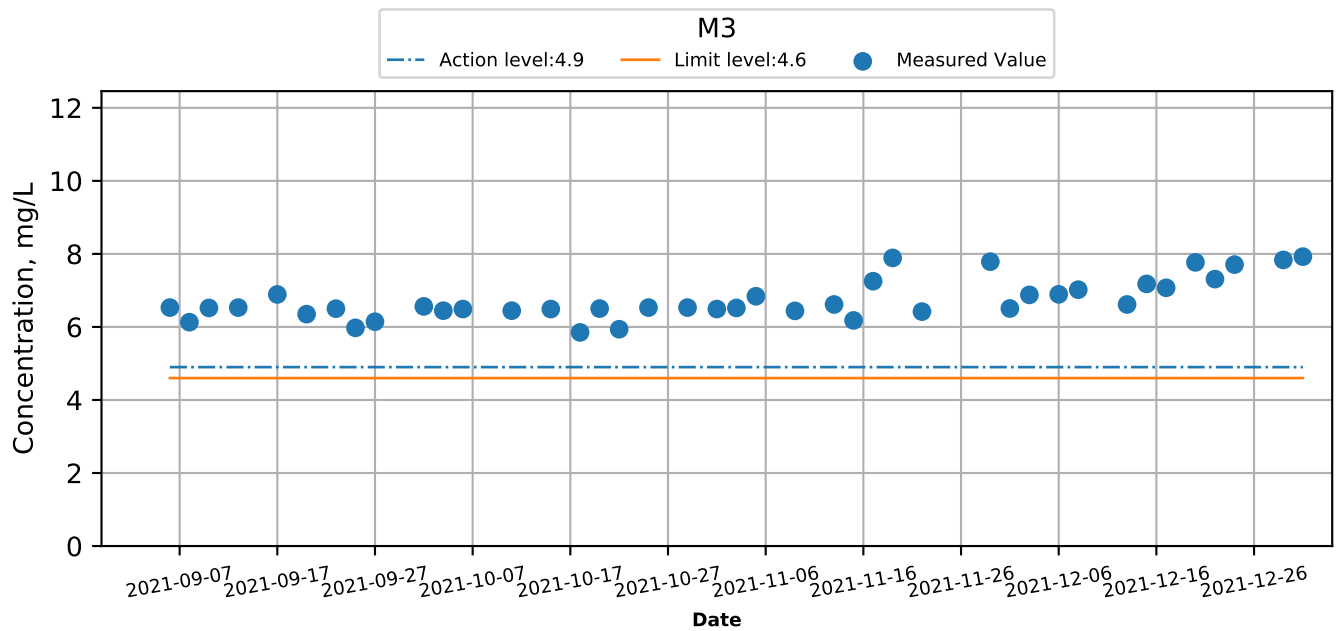
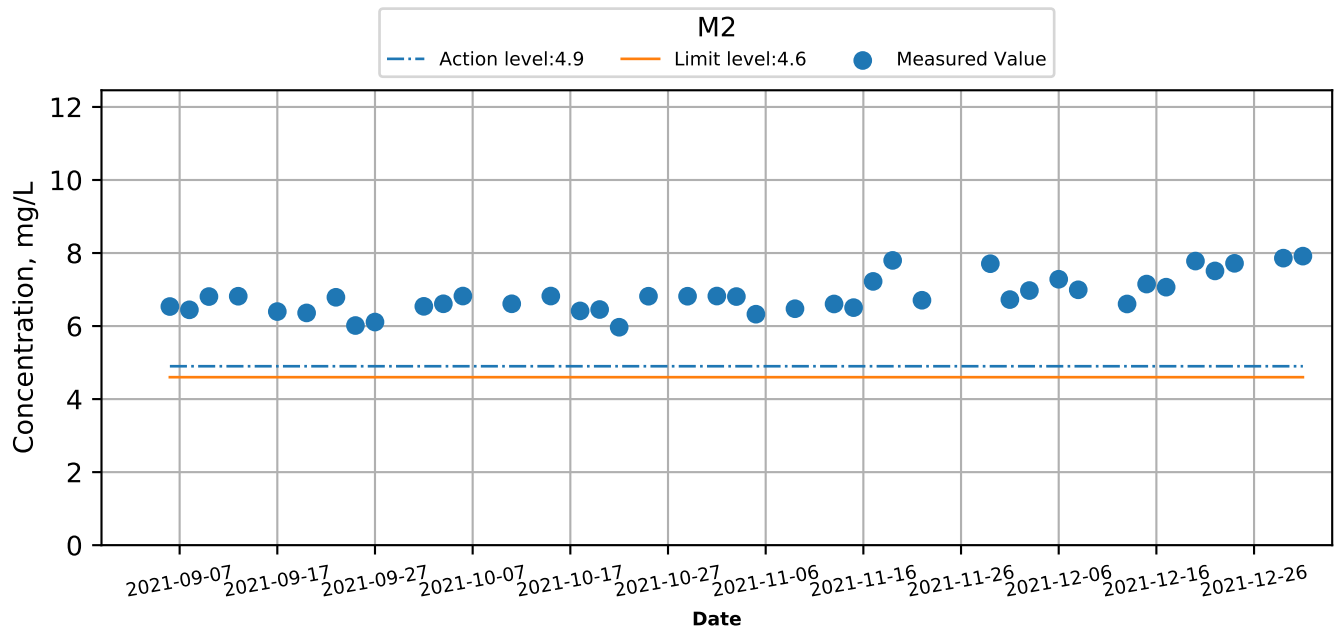
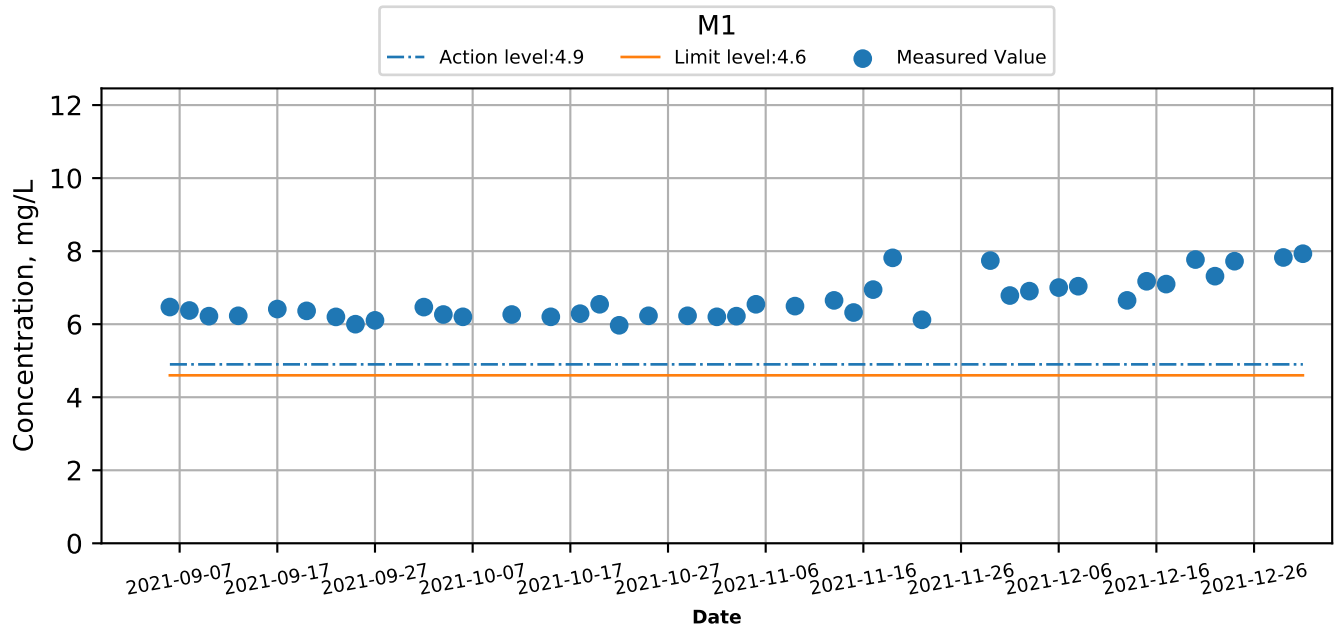
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Ebb



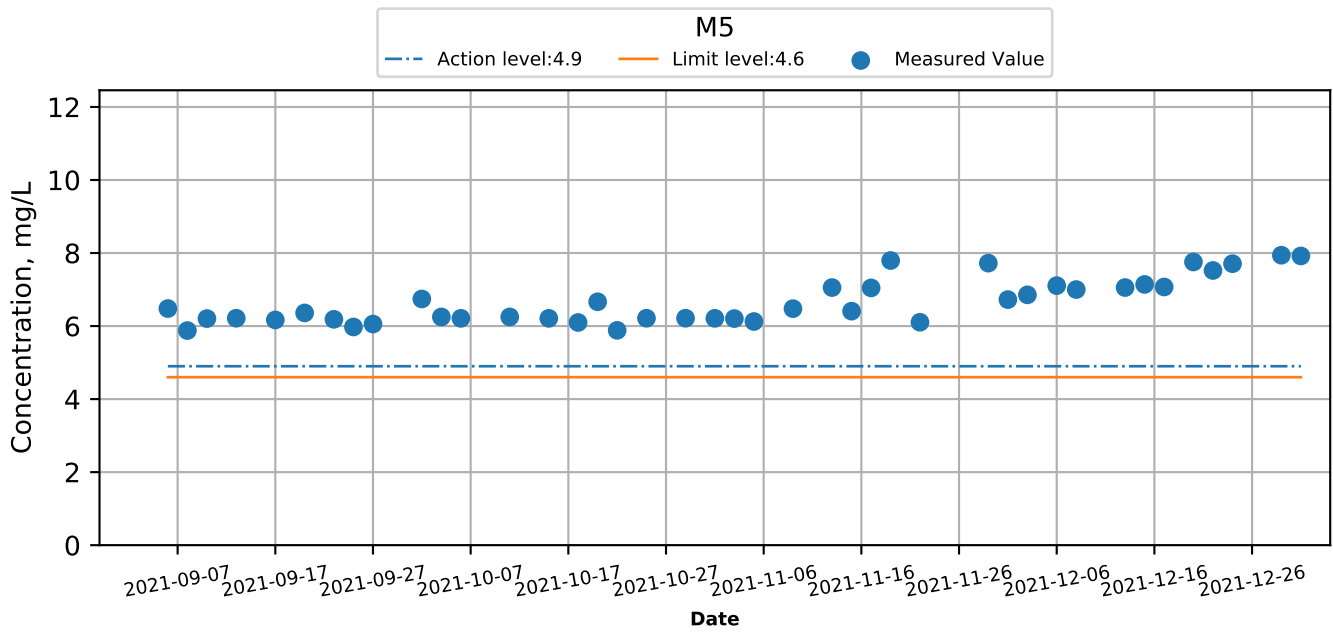
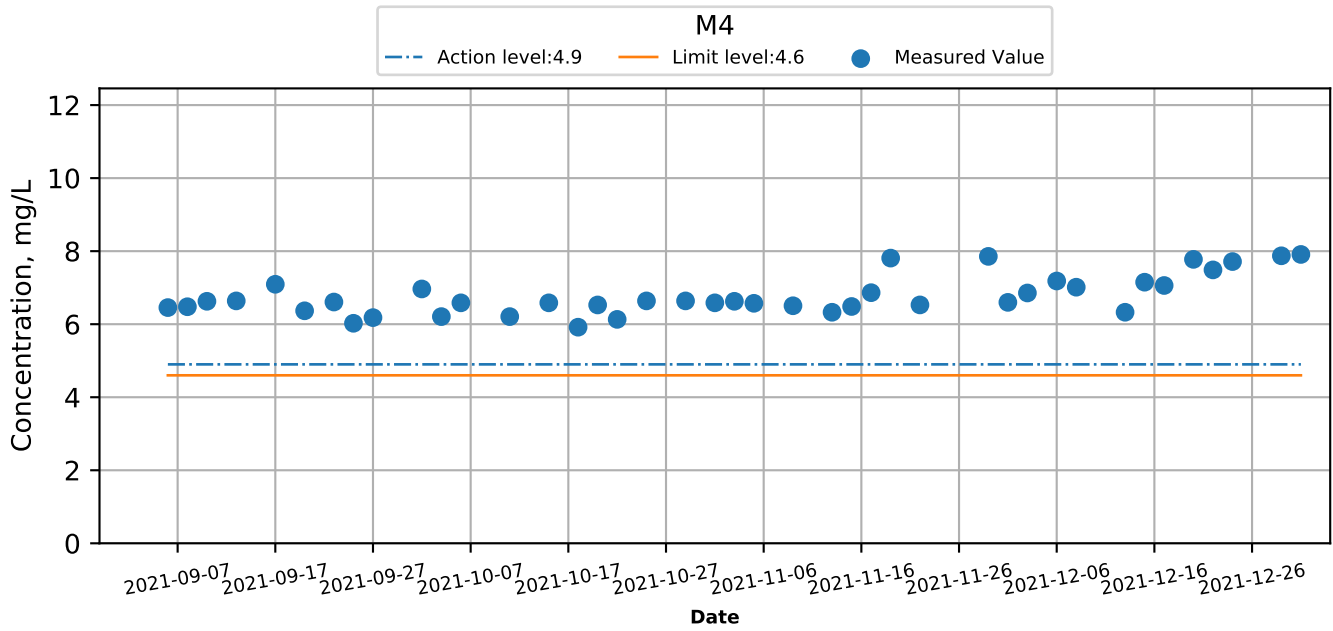
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Ebb



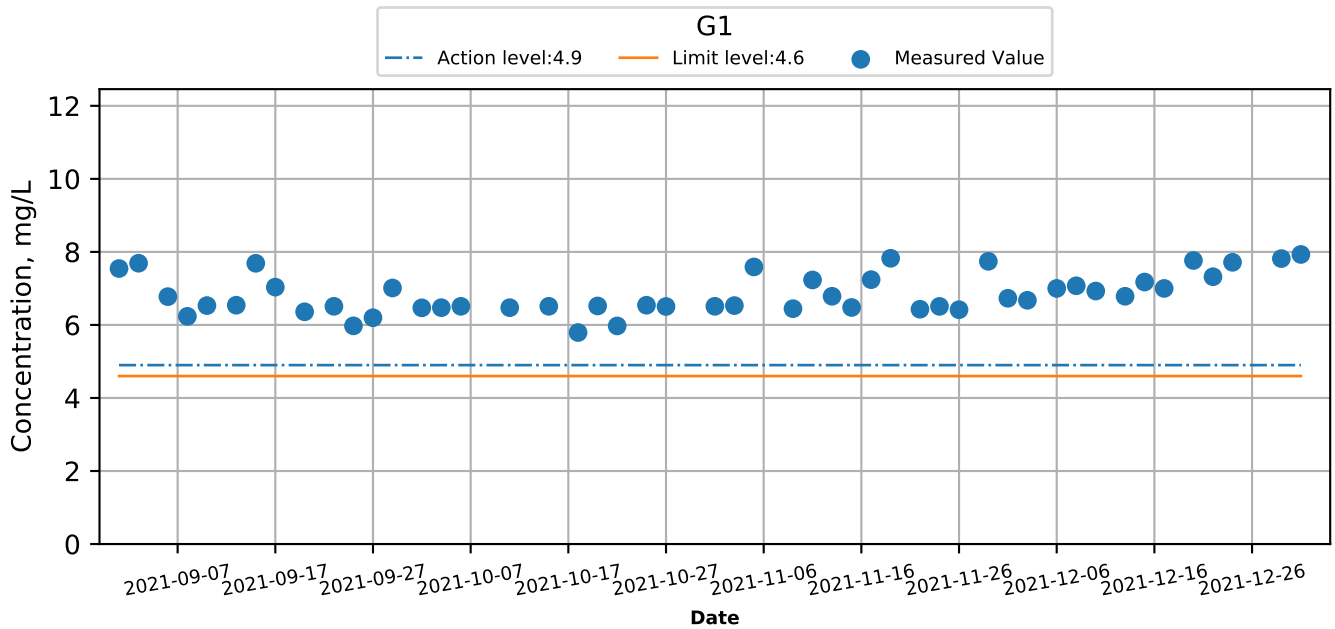
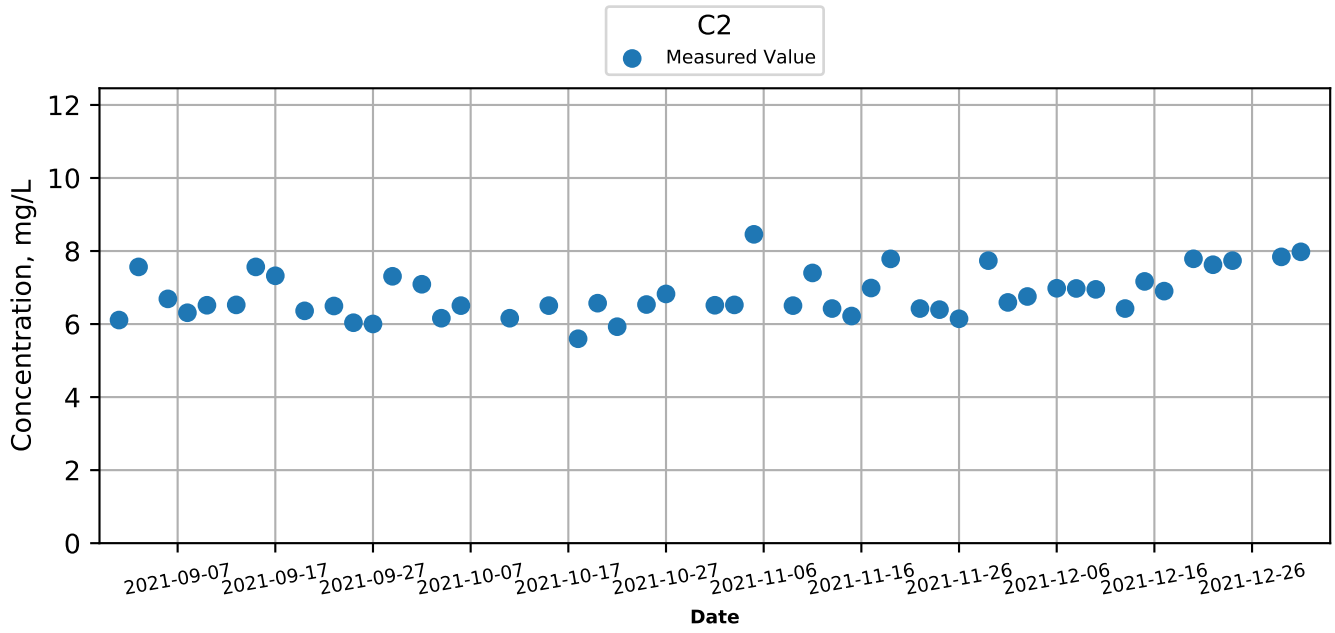
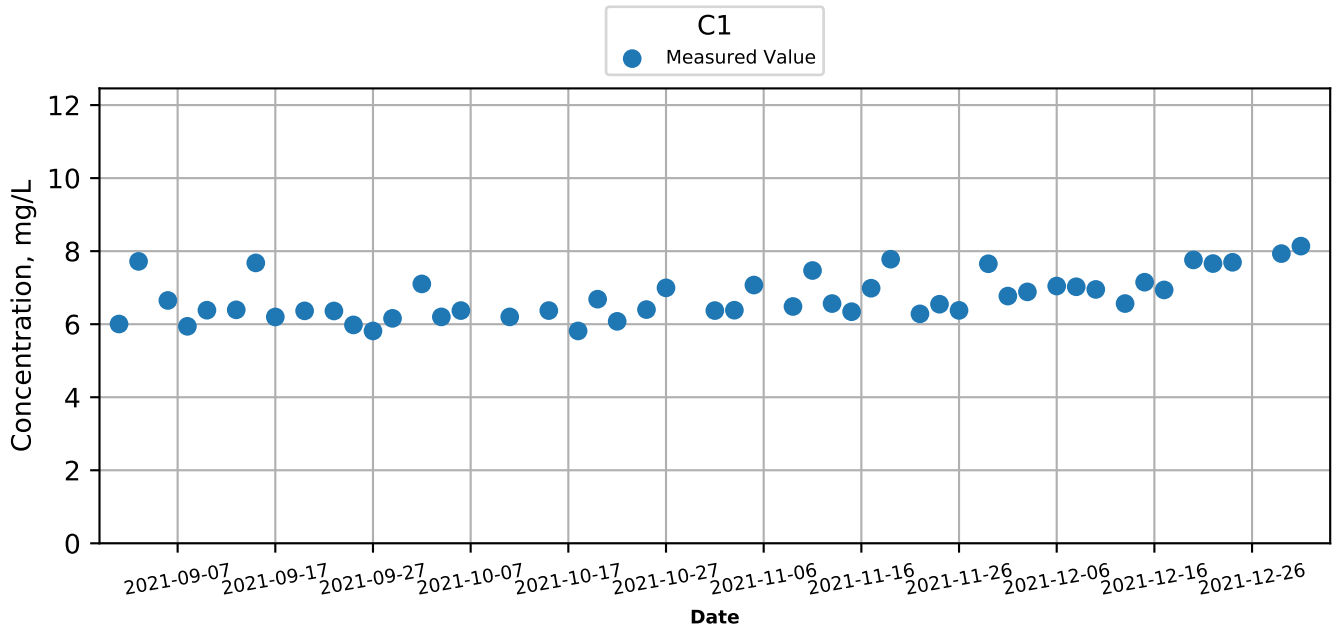
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Ebb



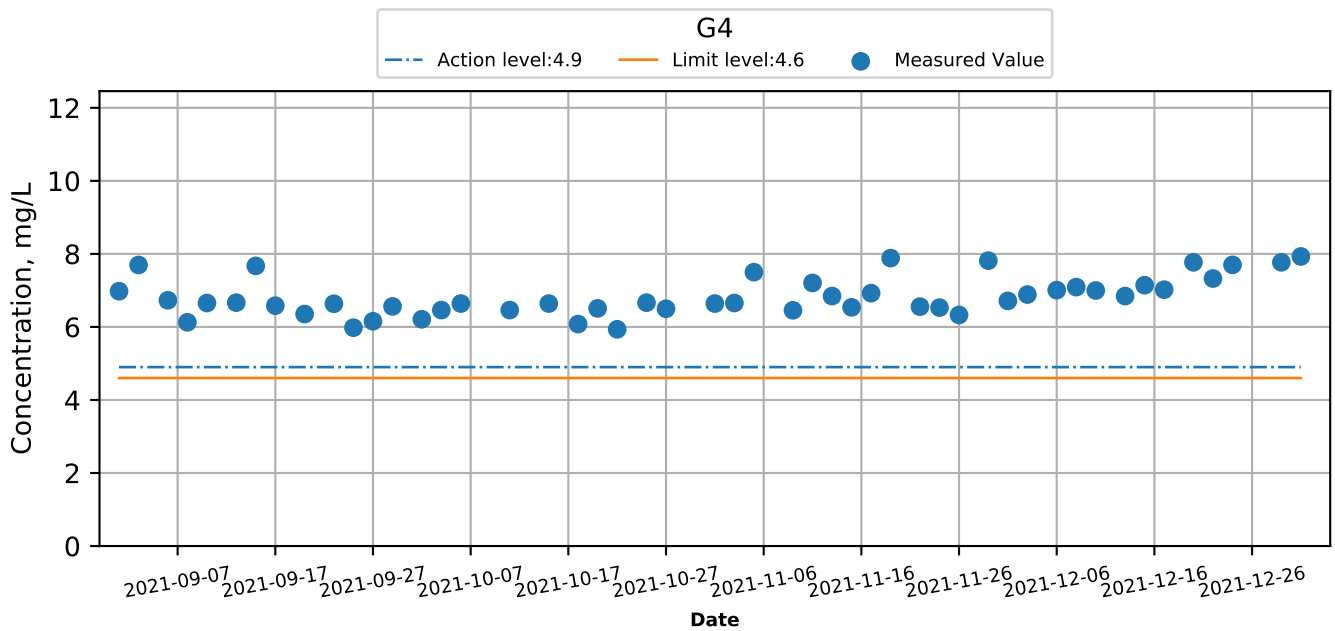
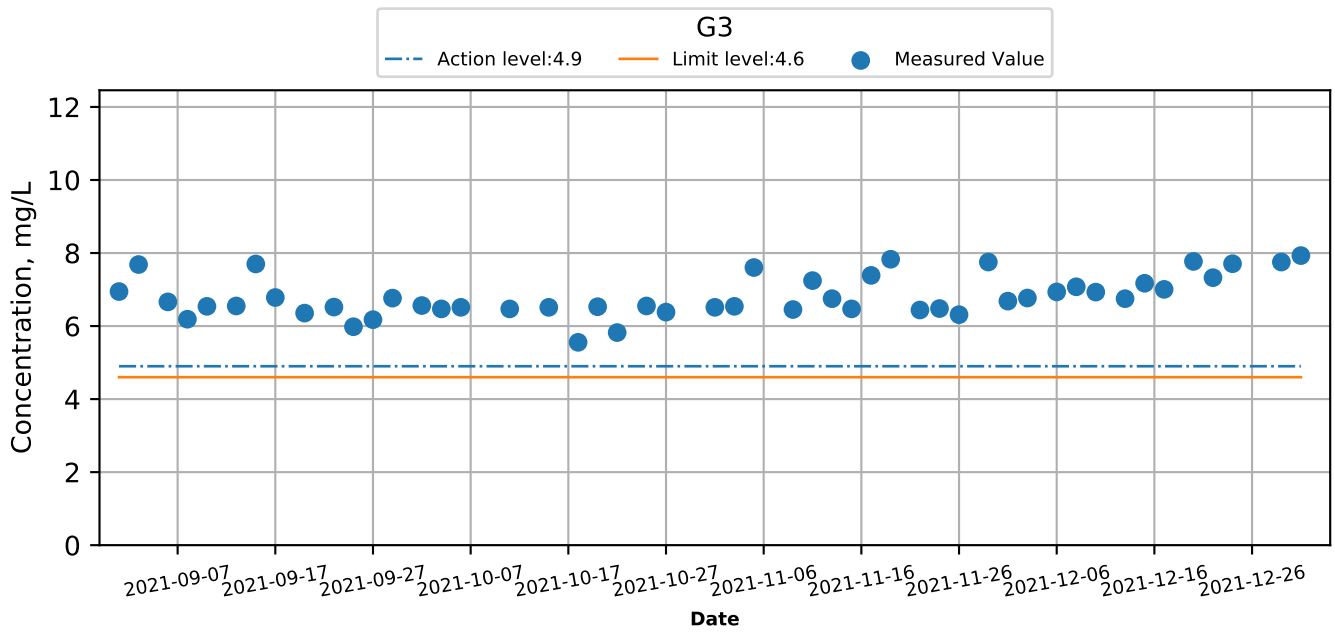
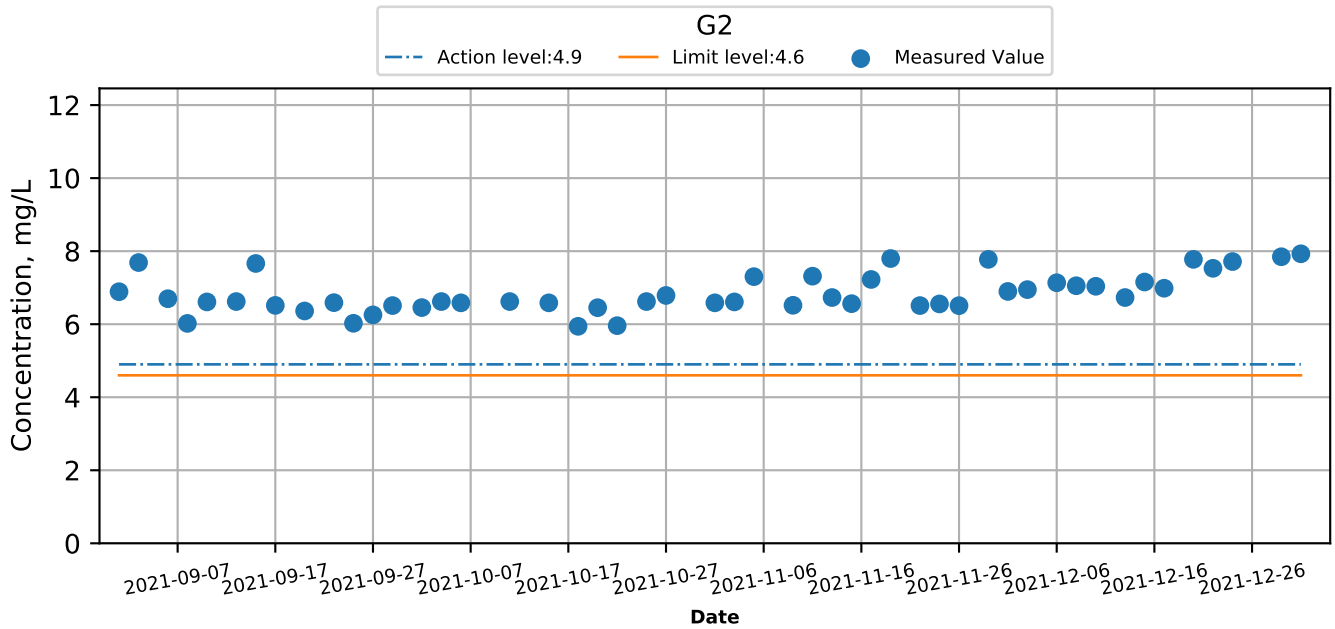
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Flood



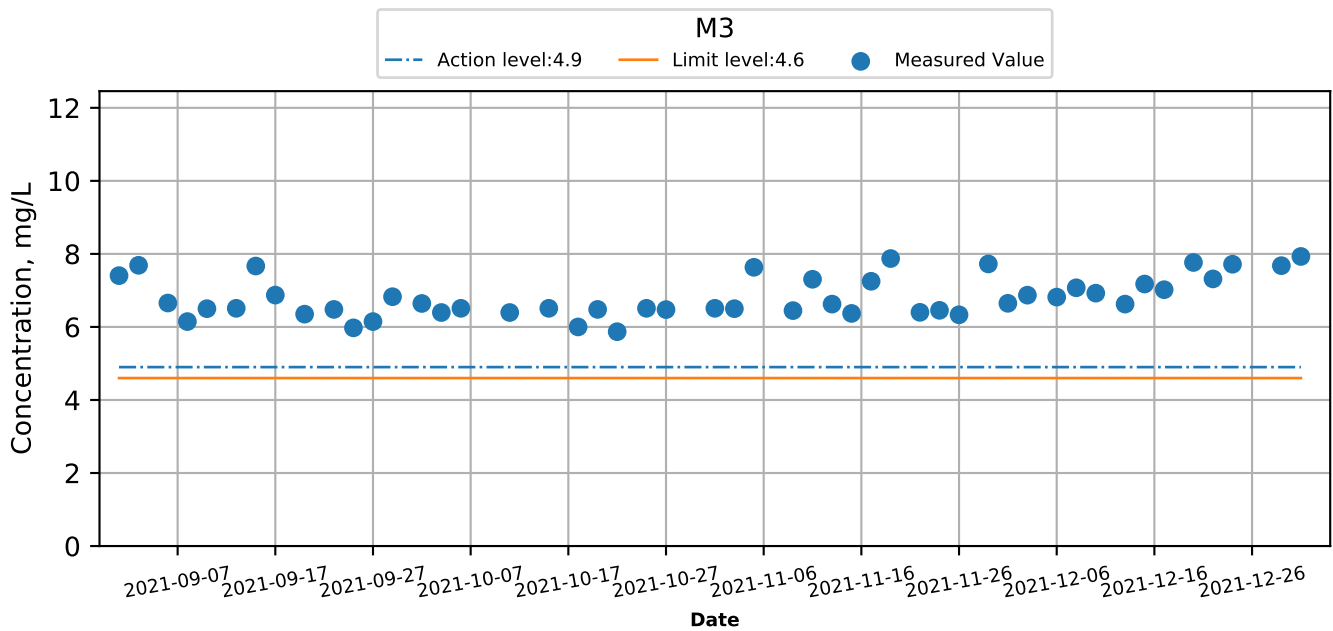
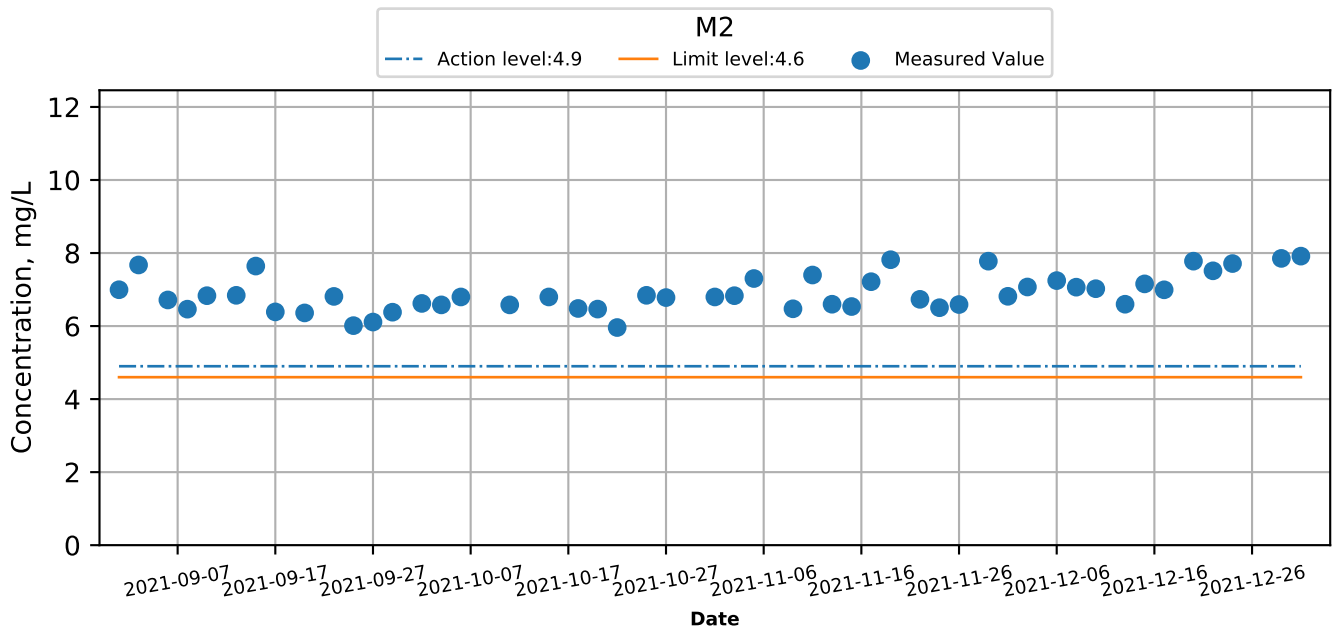
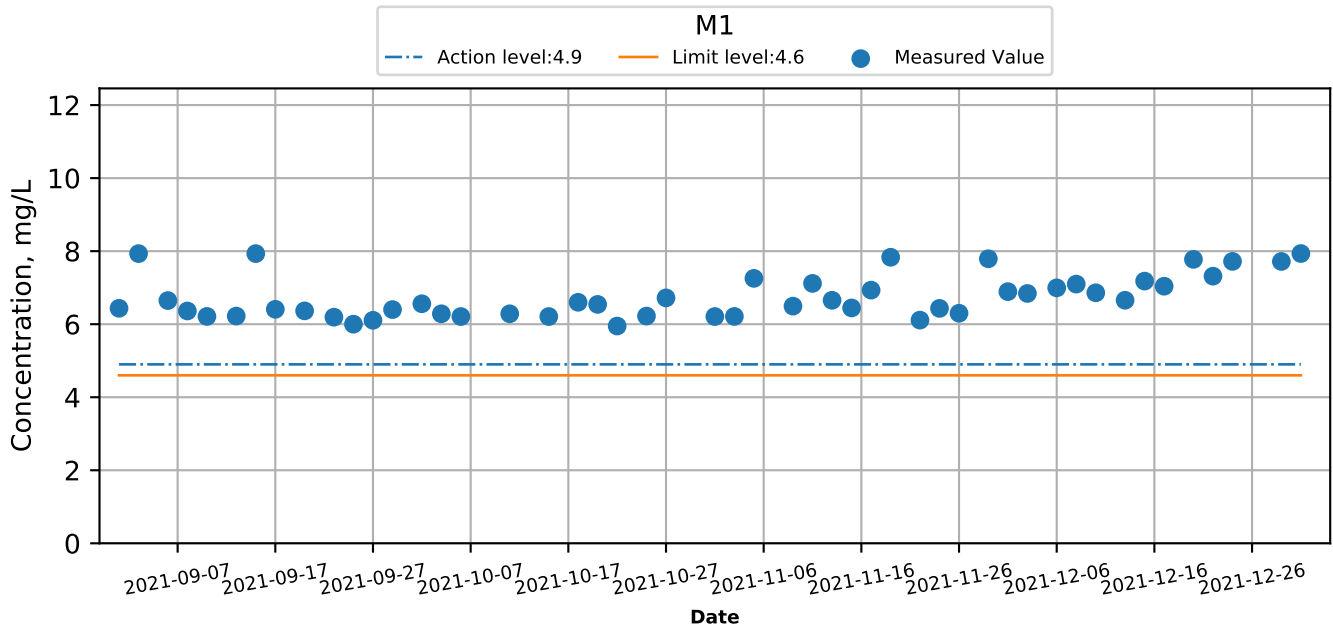
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Flood



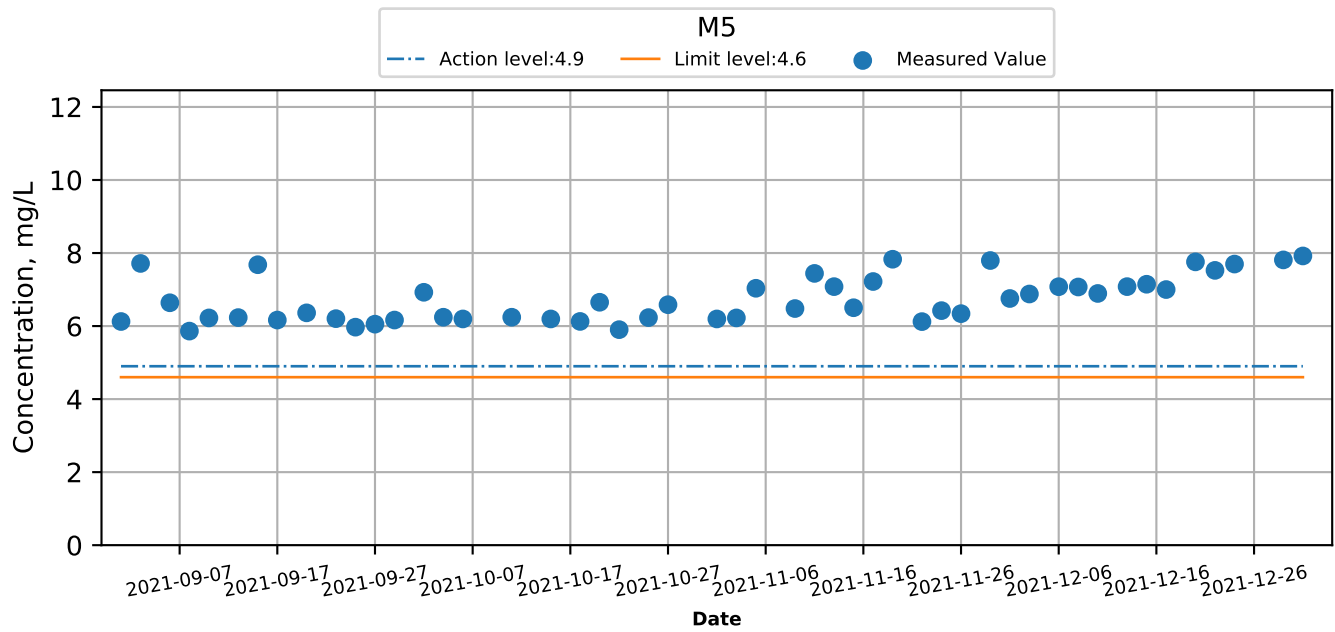
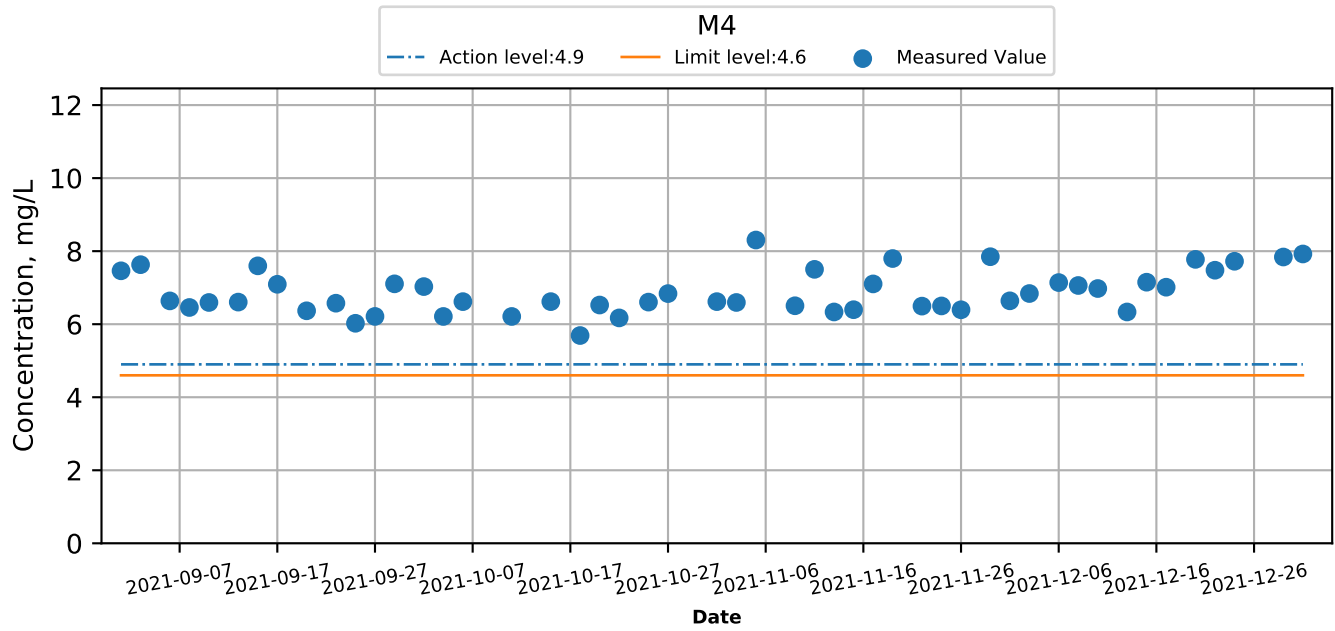
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Flood



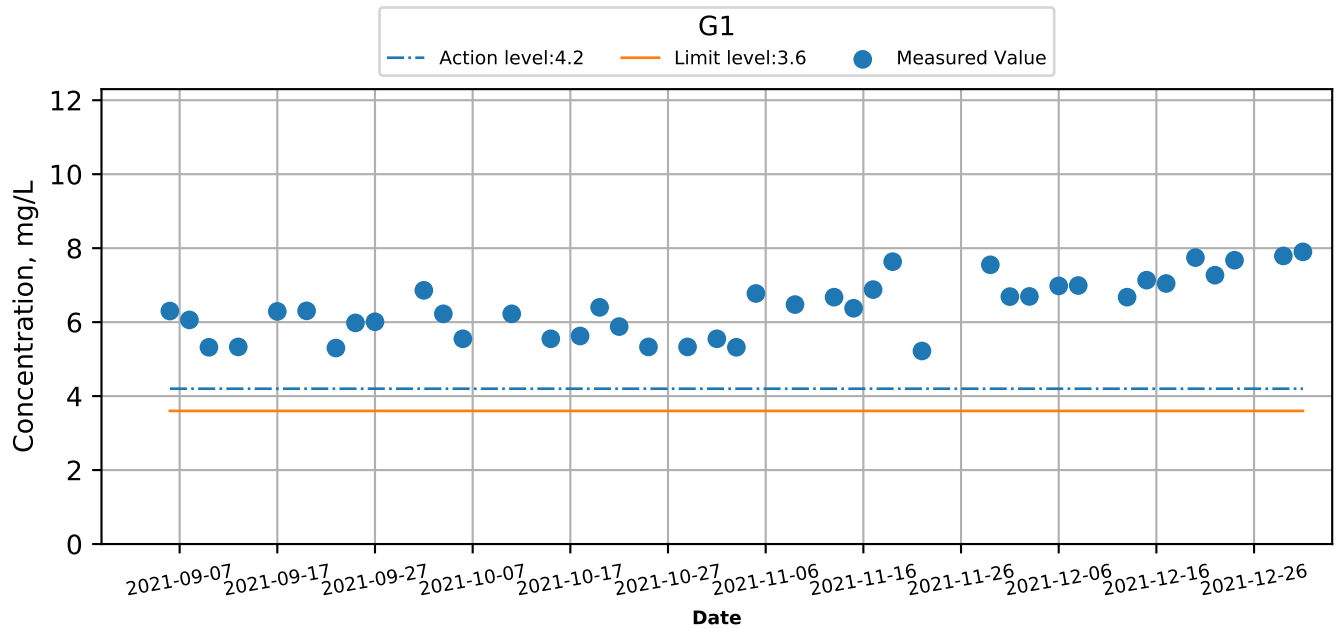
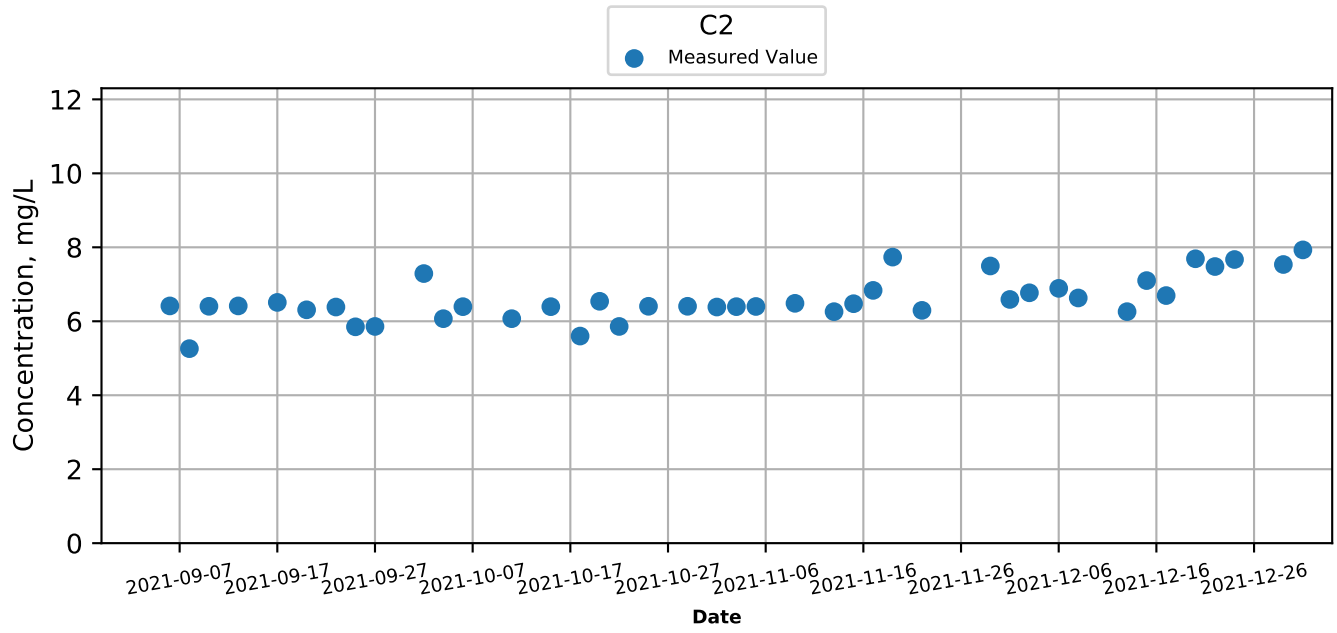
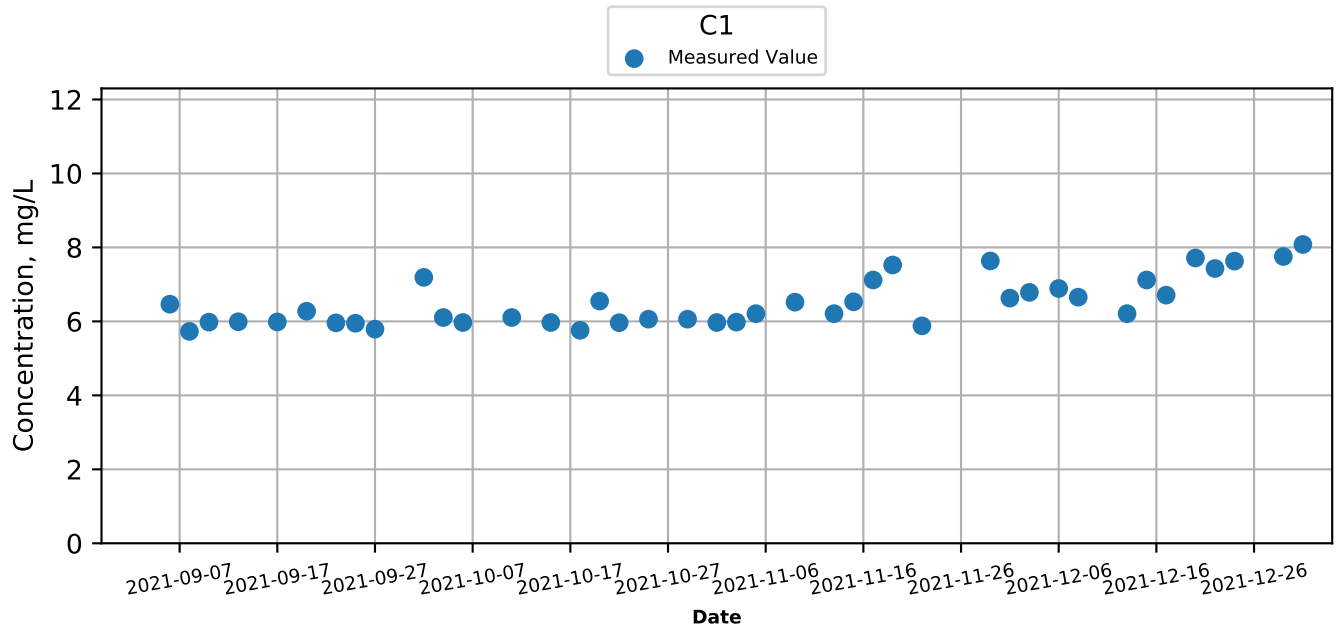
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Depth-Averaged) at Monitoring Stations during Mid-Flood



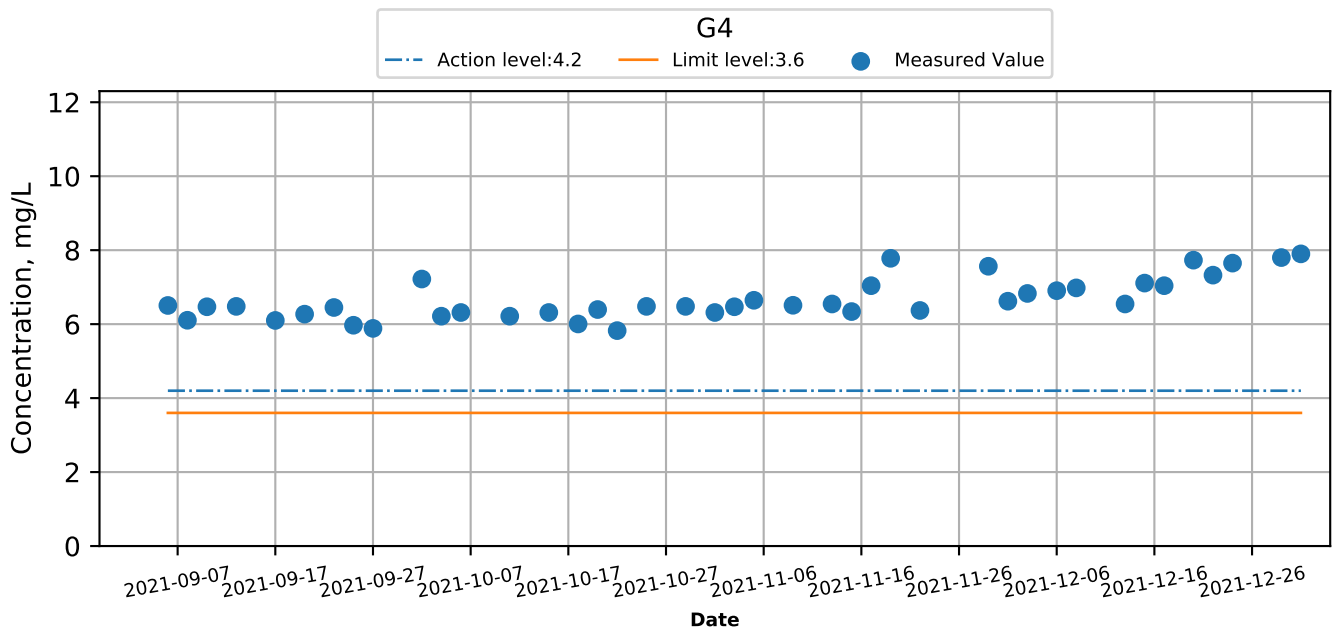
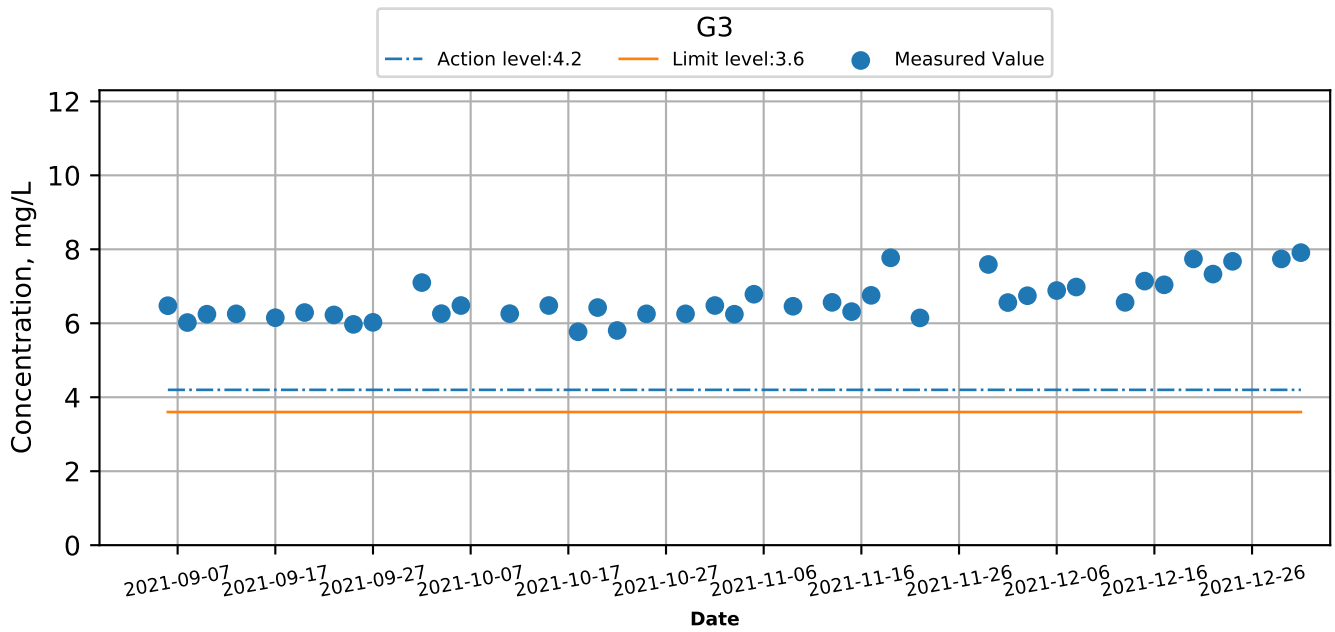
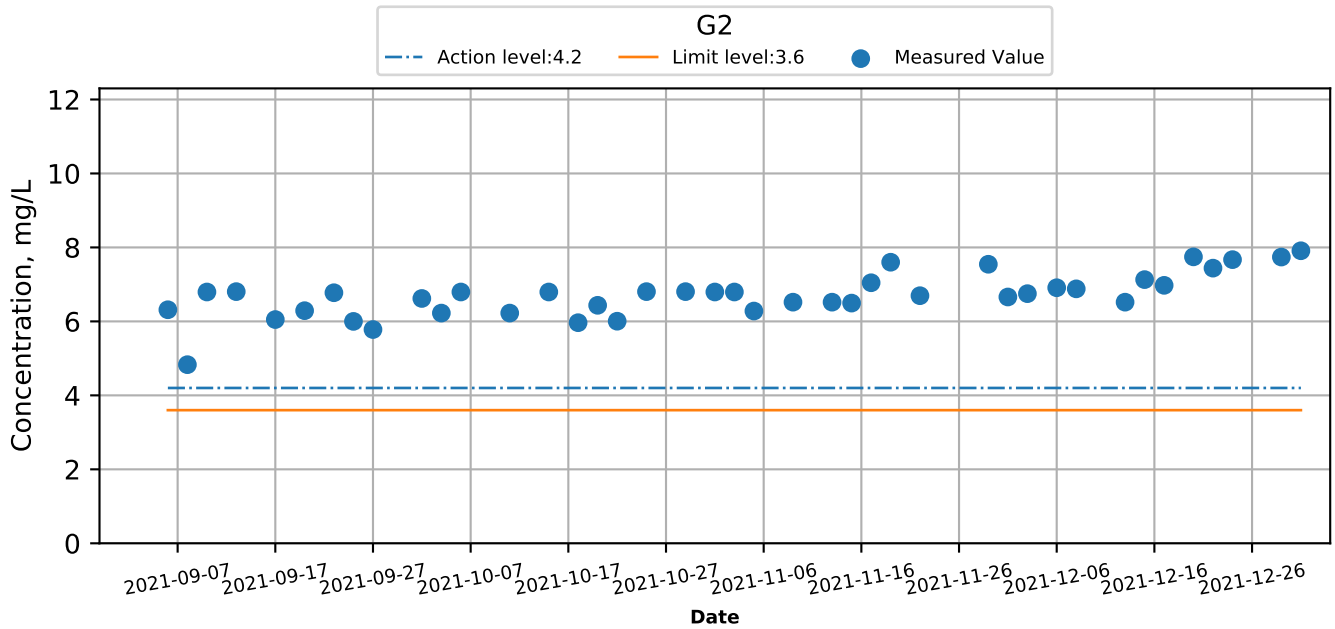
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Ebb



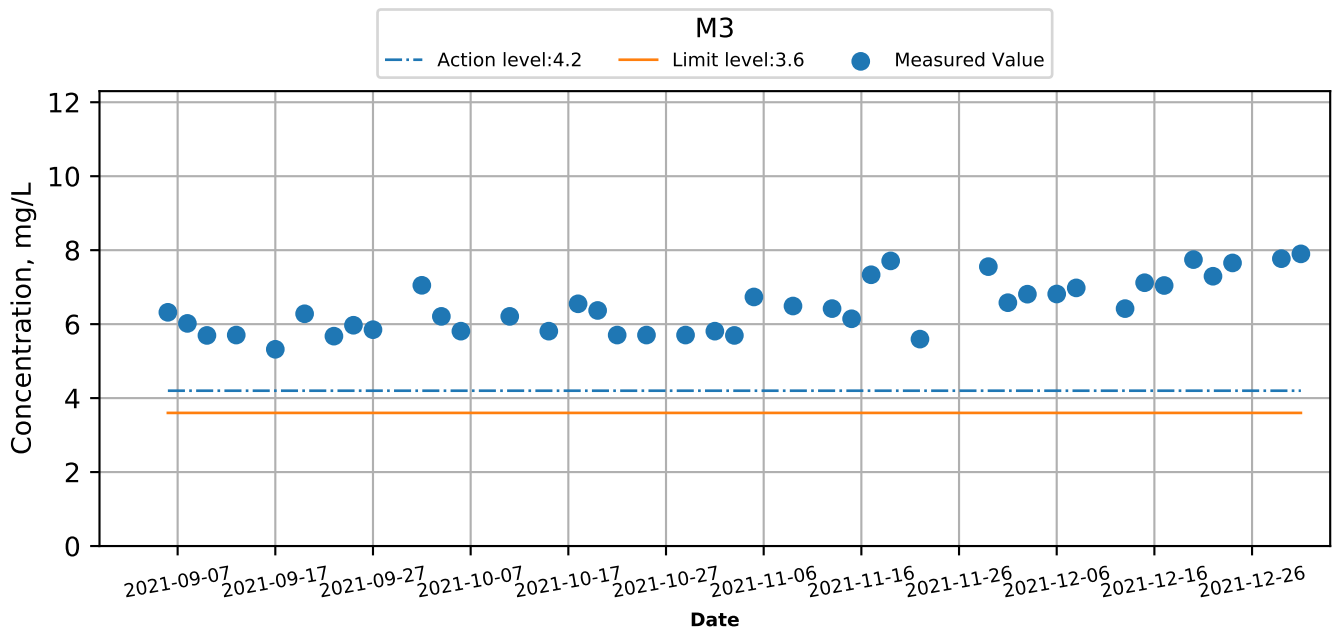
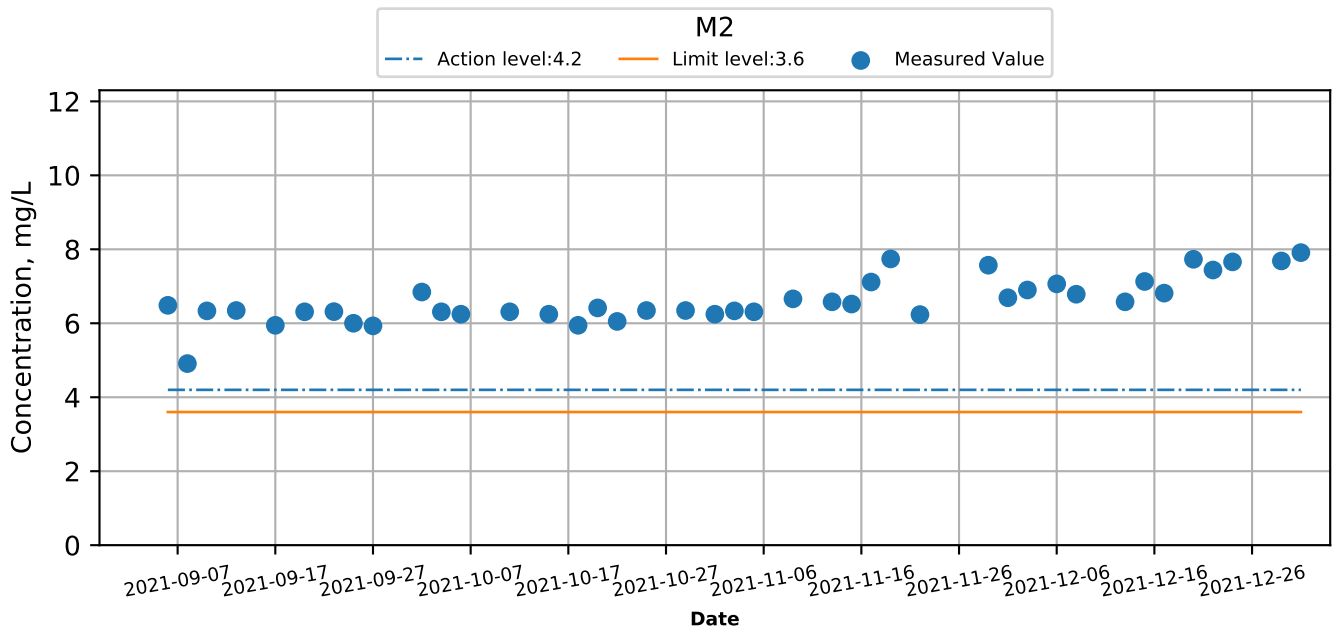
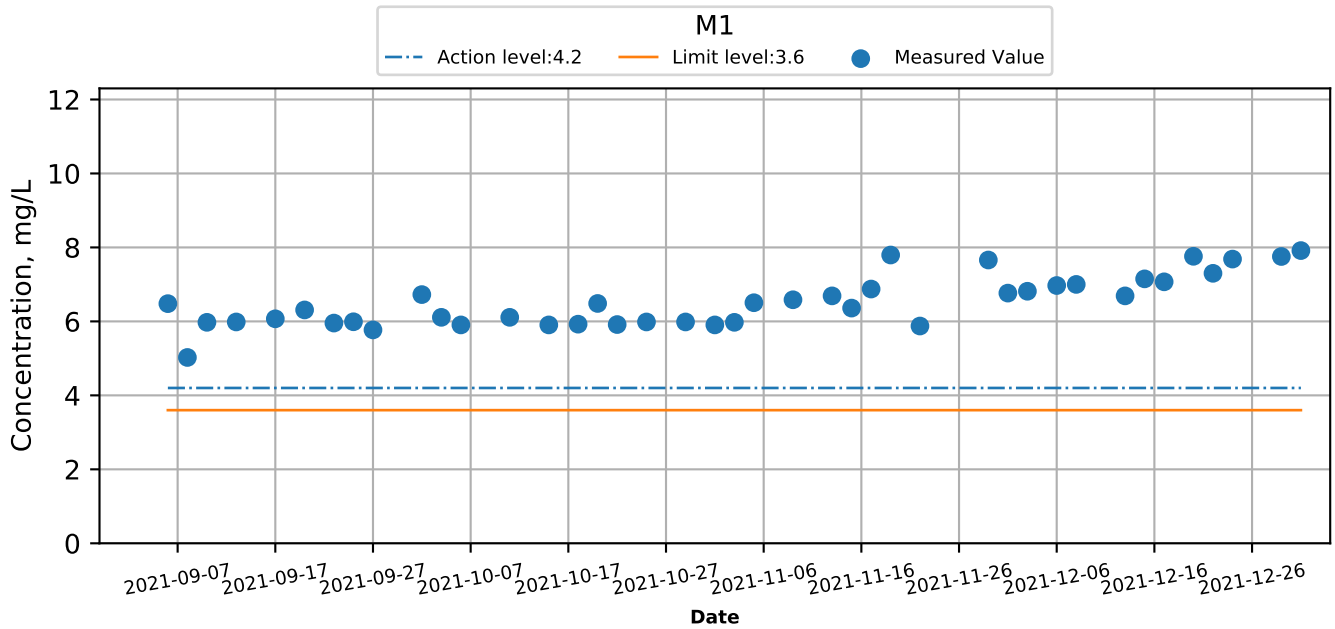
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Ebb



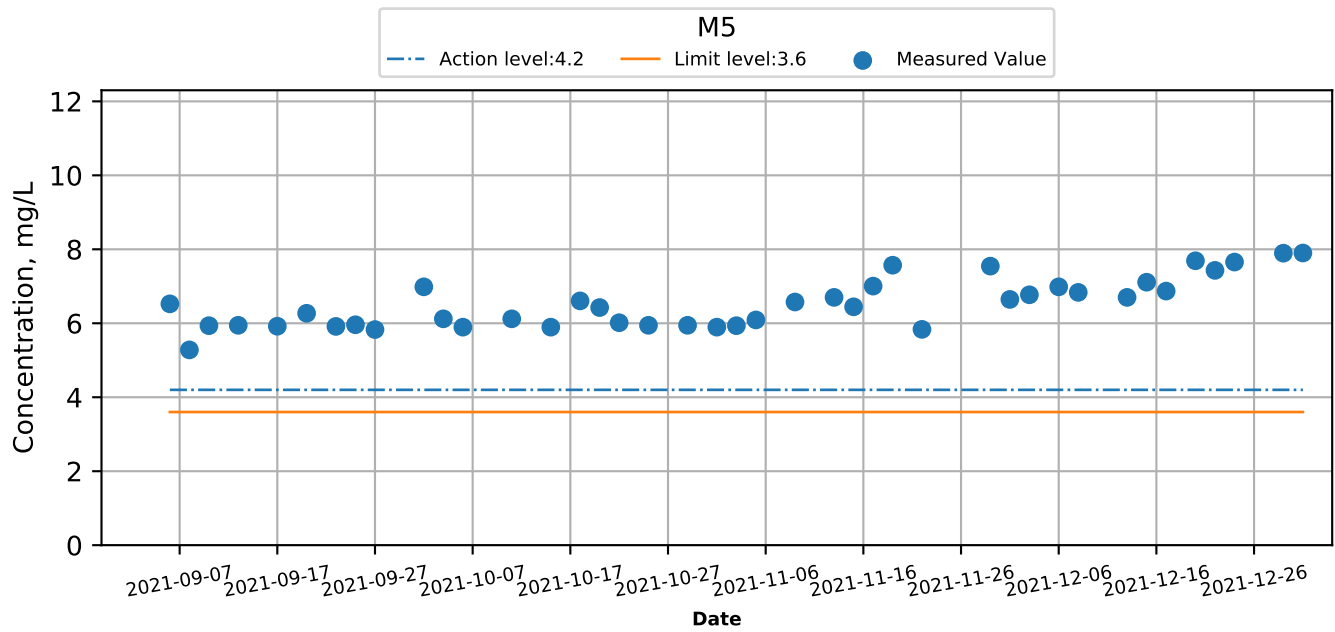
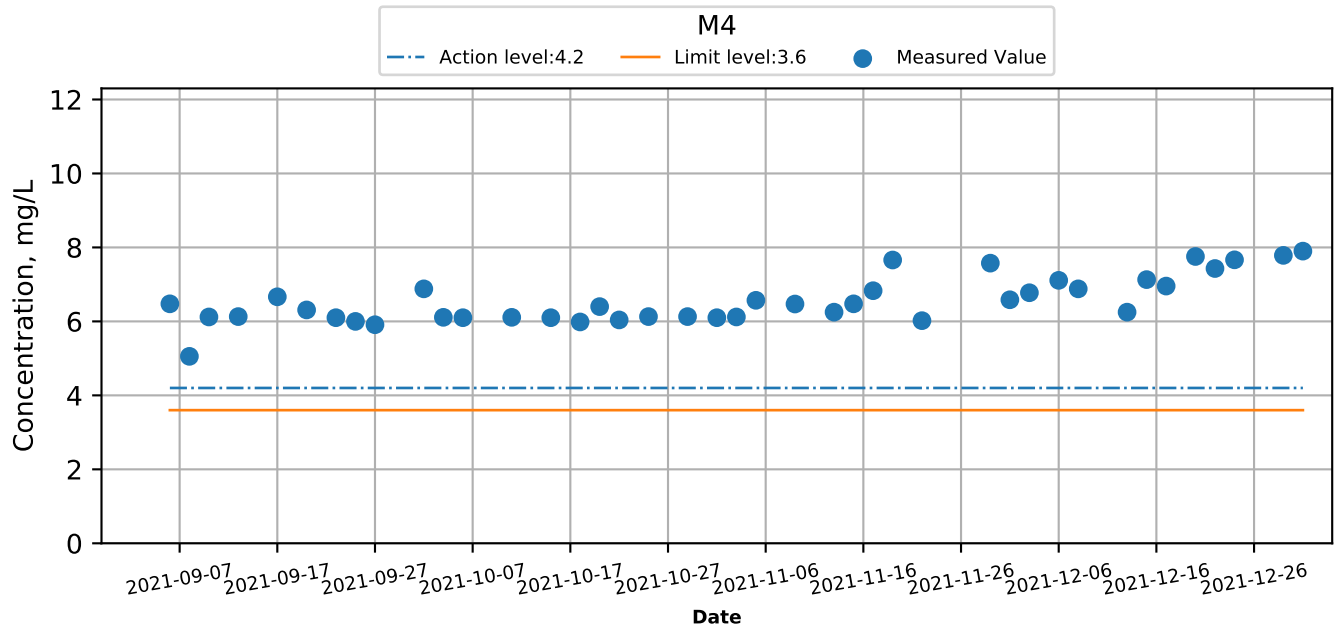
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Ebb



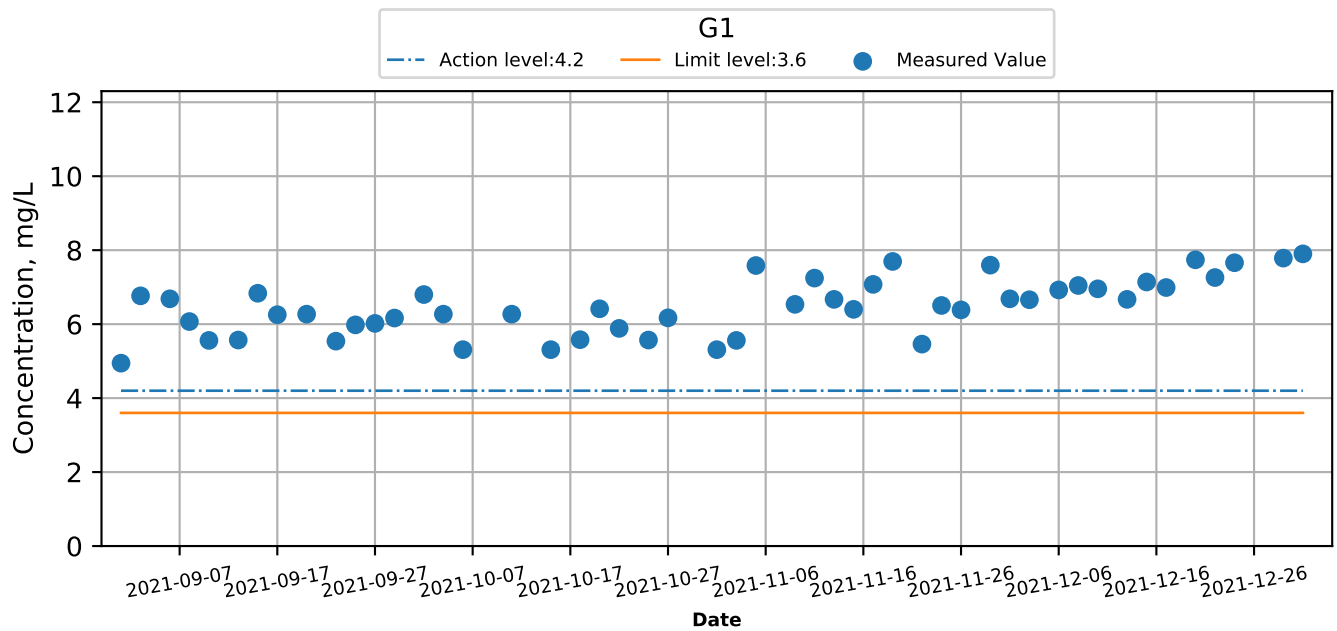
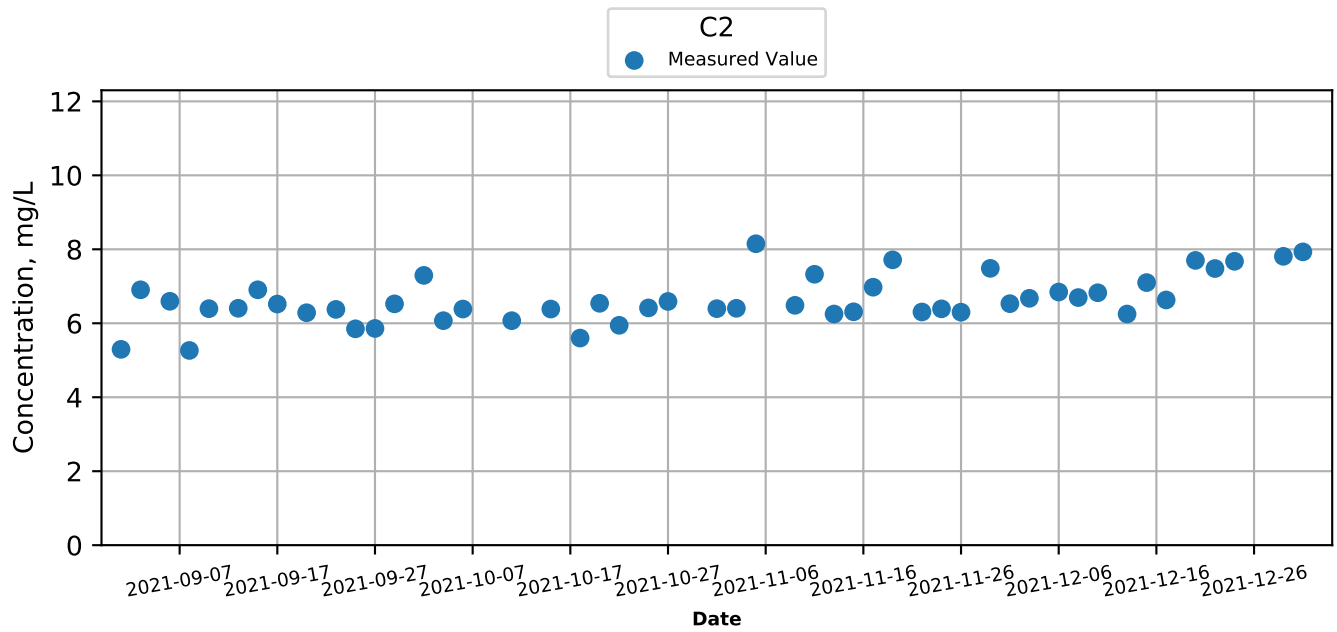
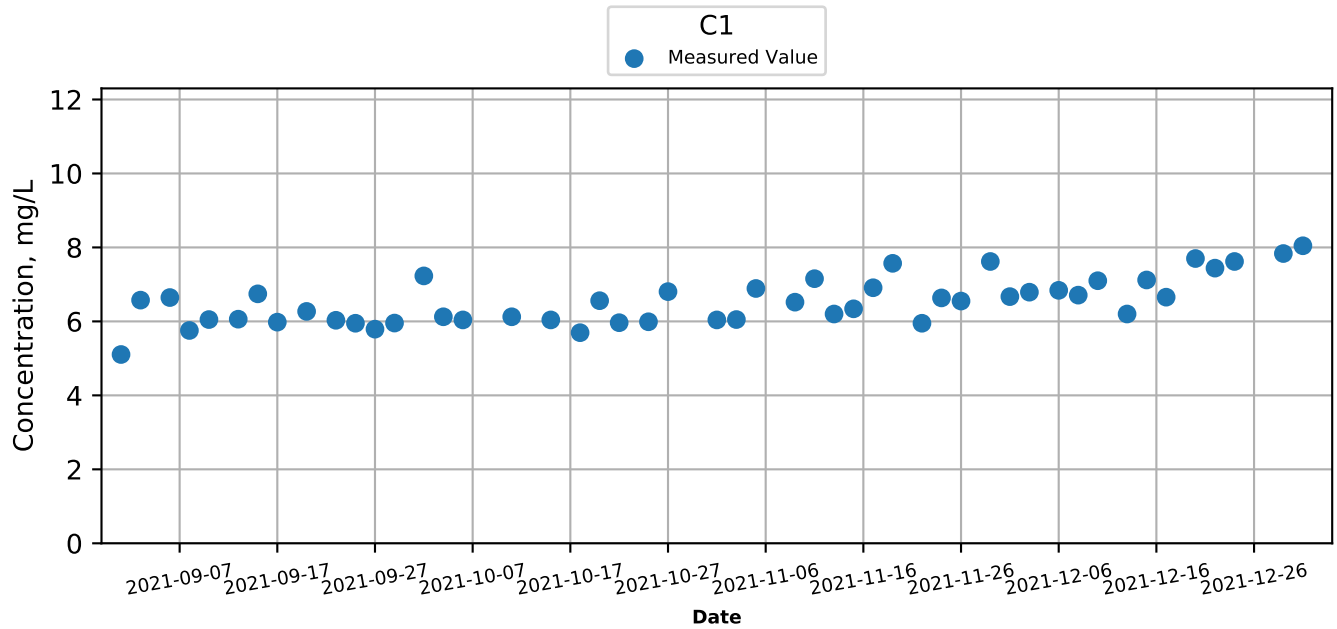
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Ebb



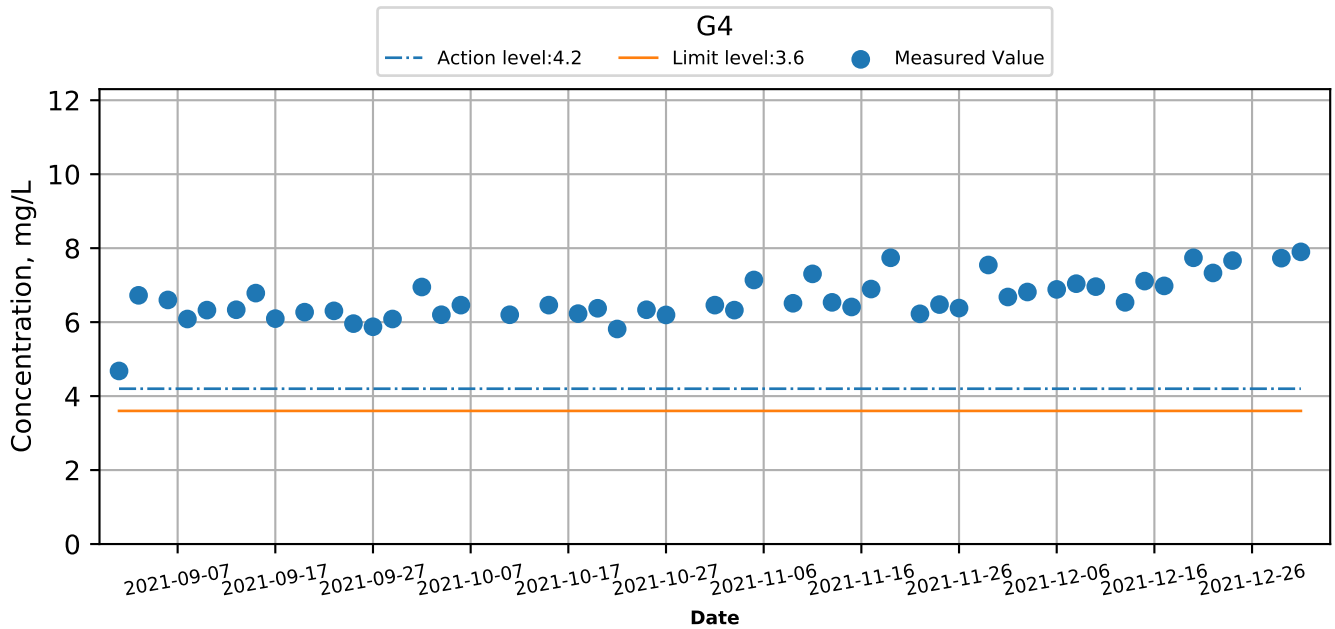
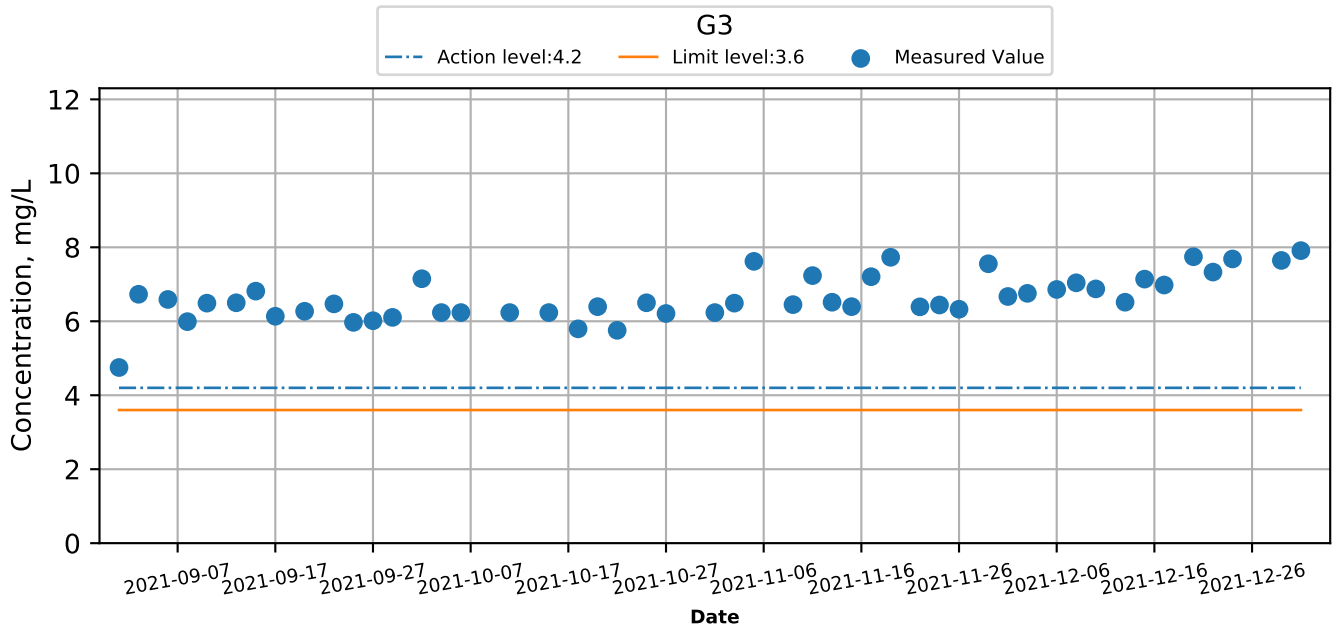
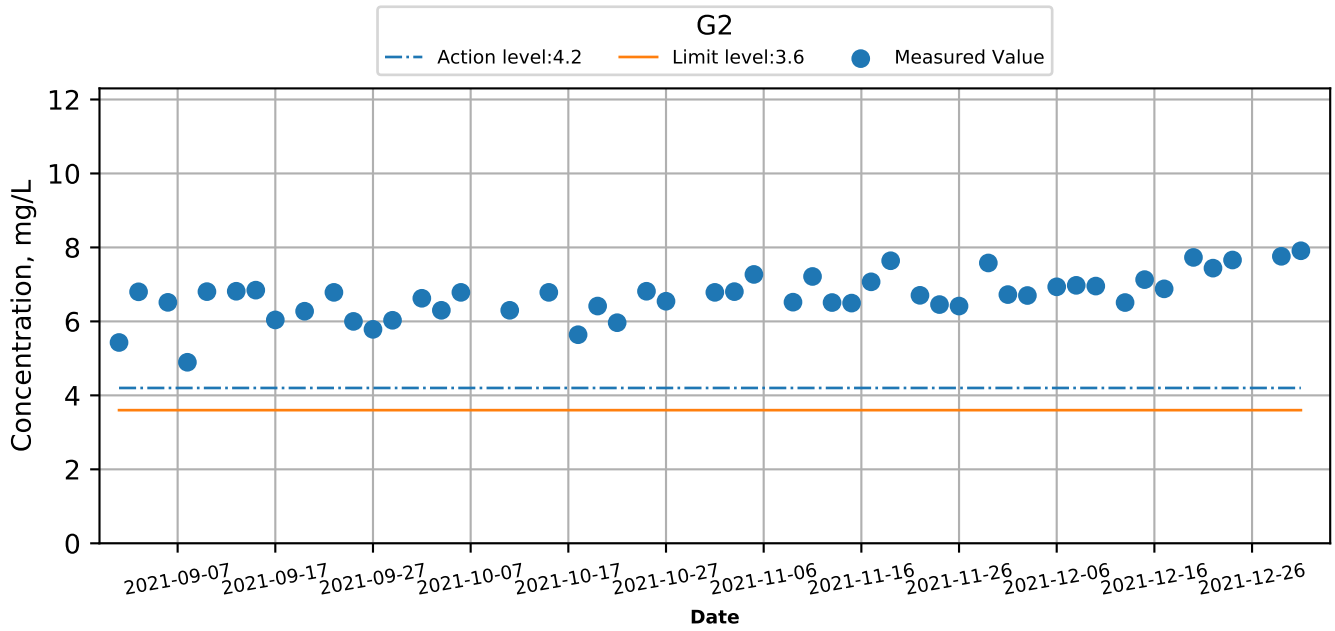
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Flood



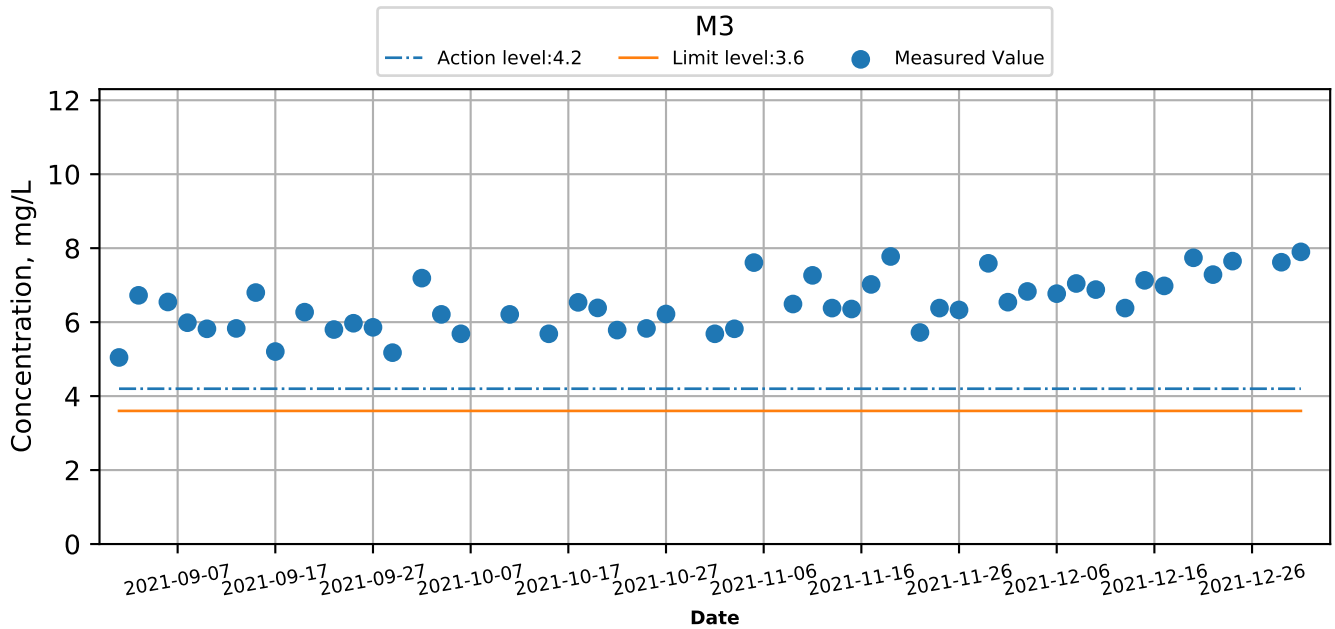
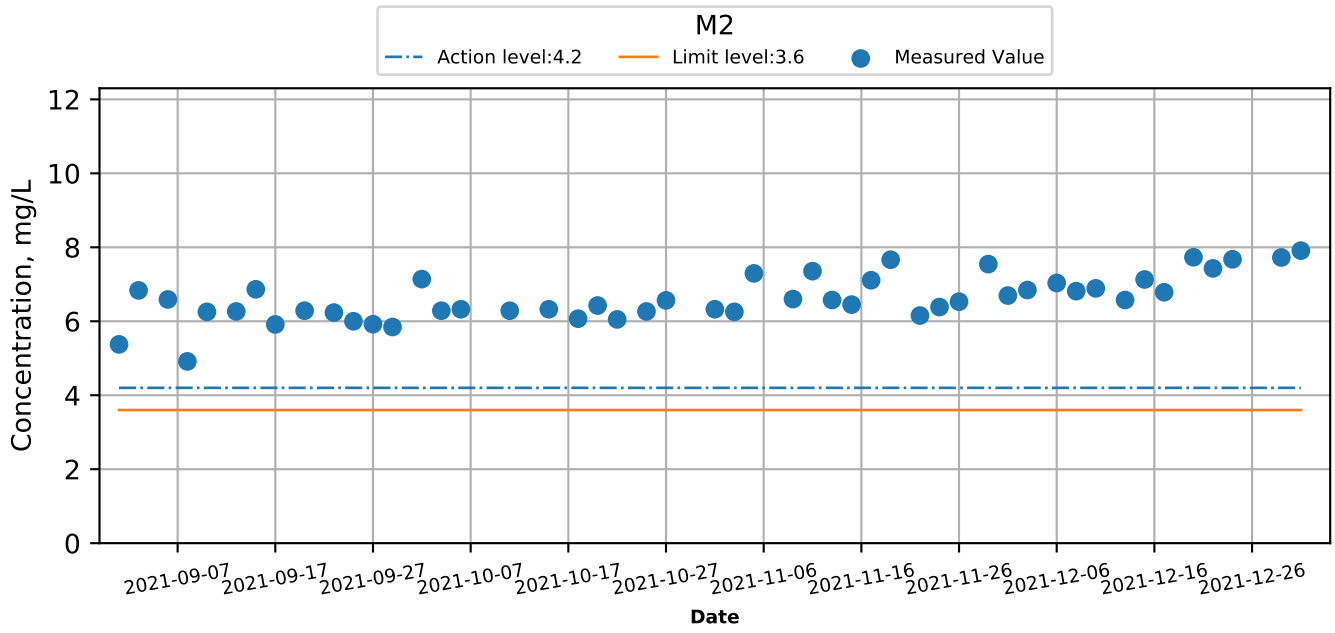
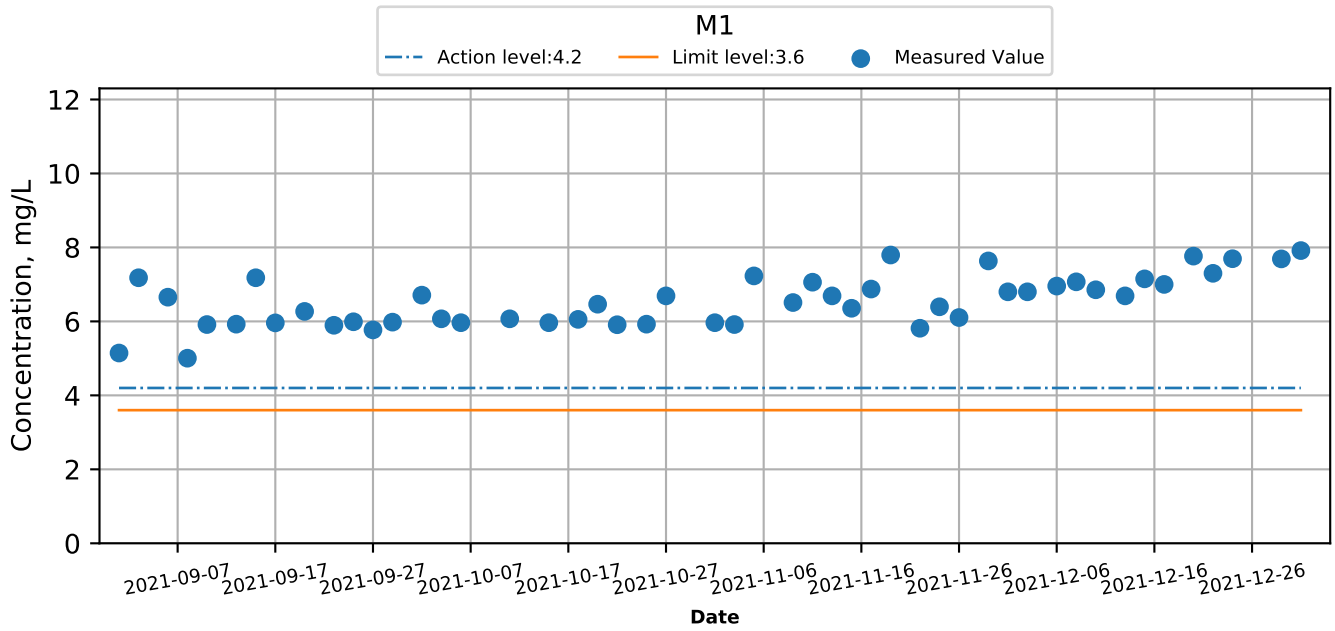
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Flood



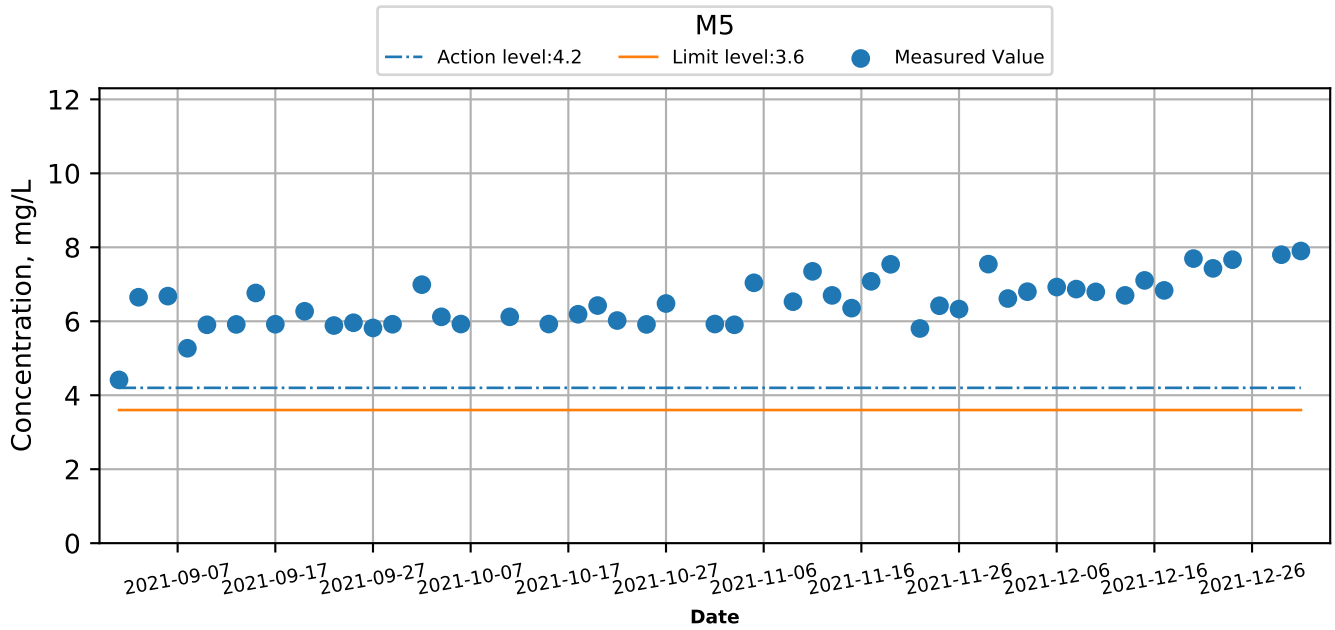
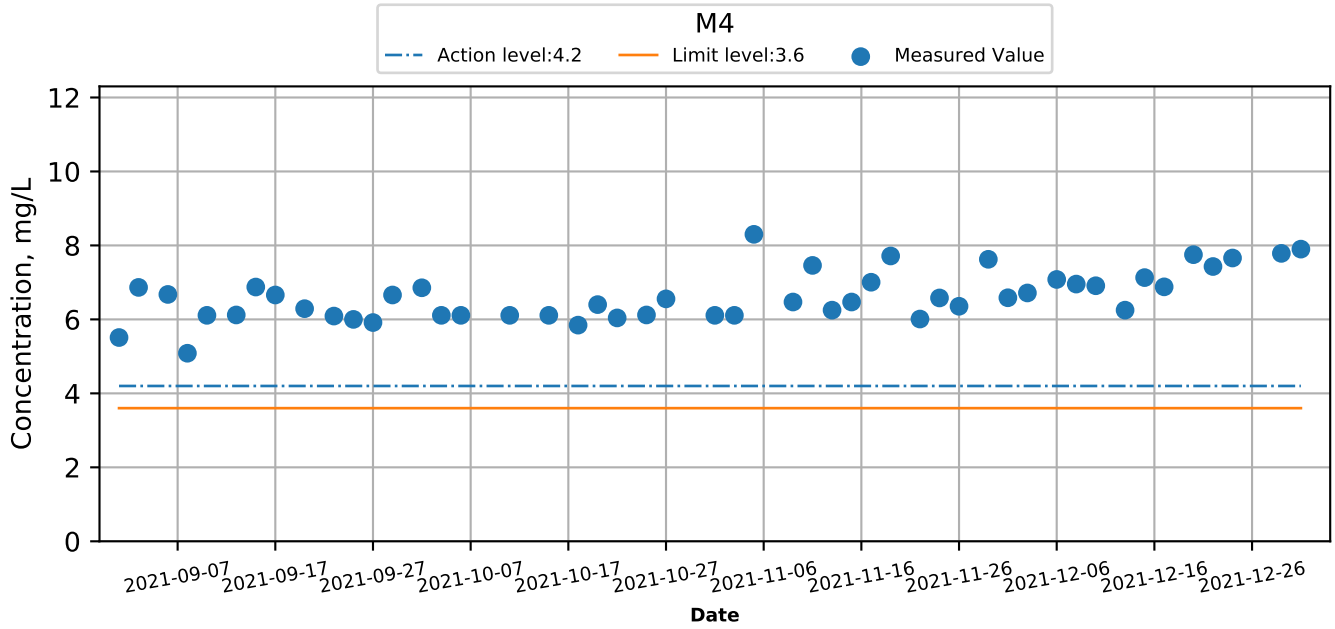
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Flood



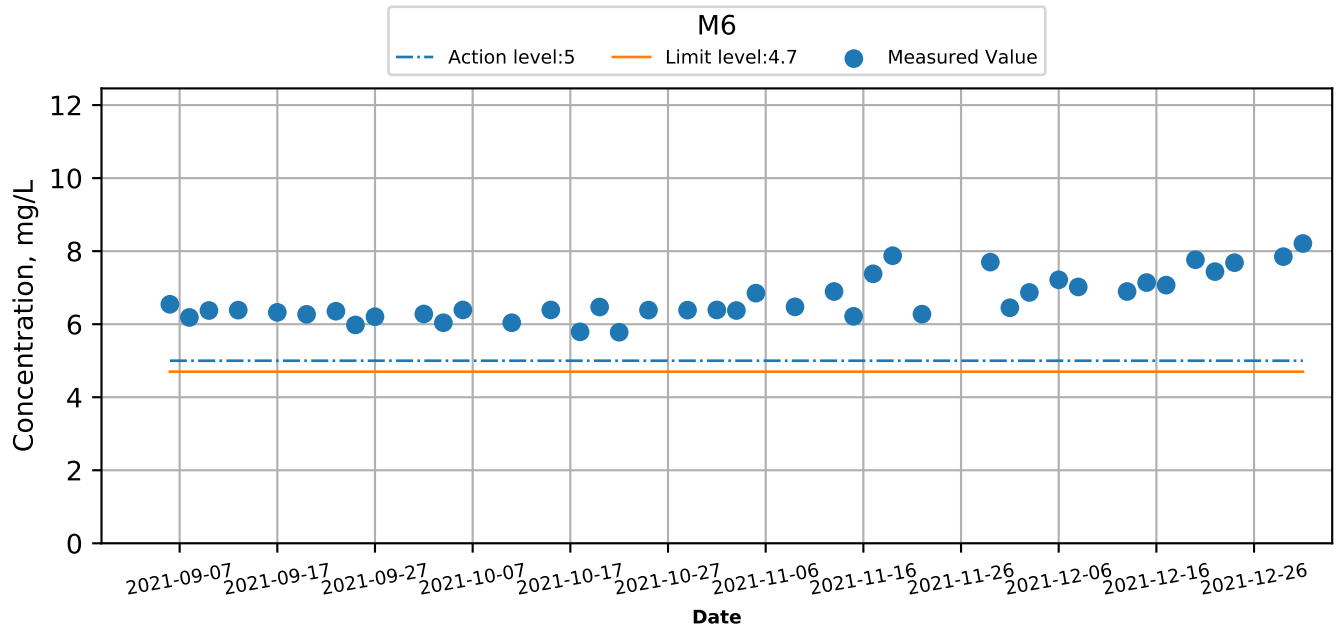
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Bottom) at Monitoring Stations during Mid-Flood



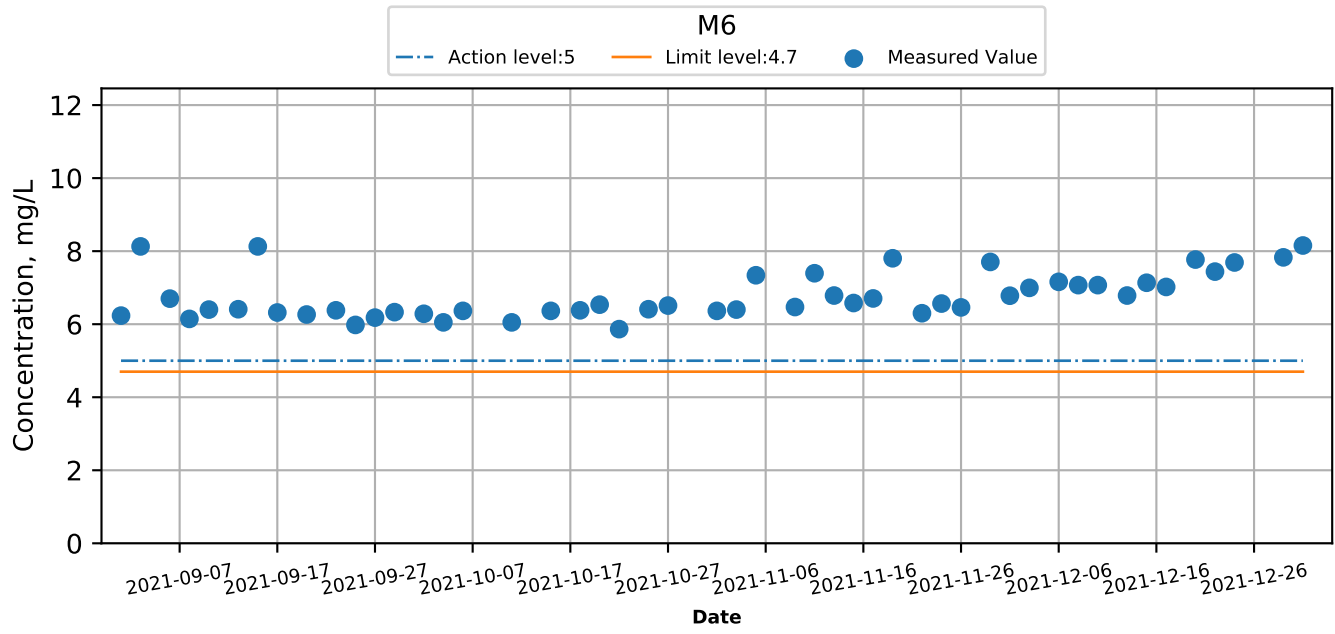
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Intake level) at Monitoring Stations during Mid-Ebb



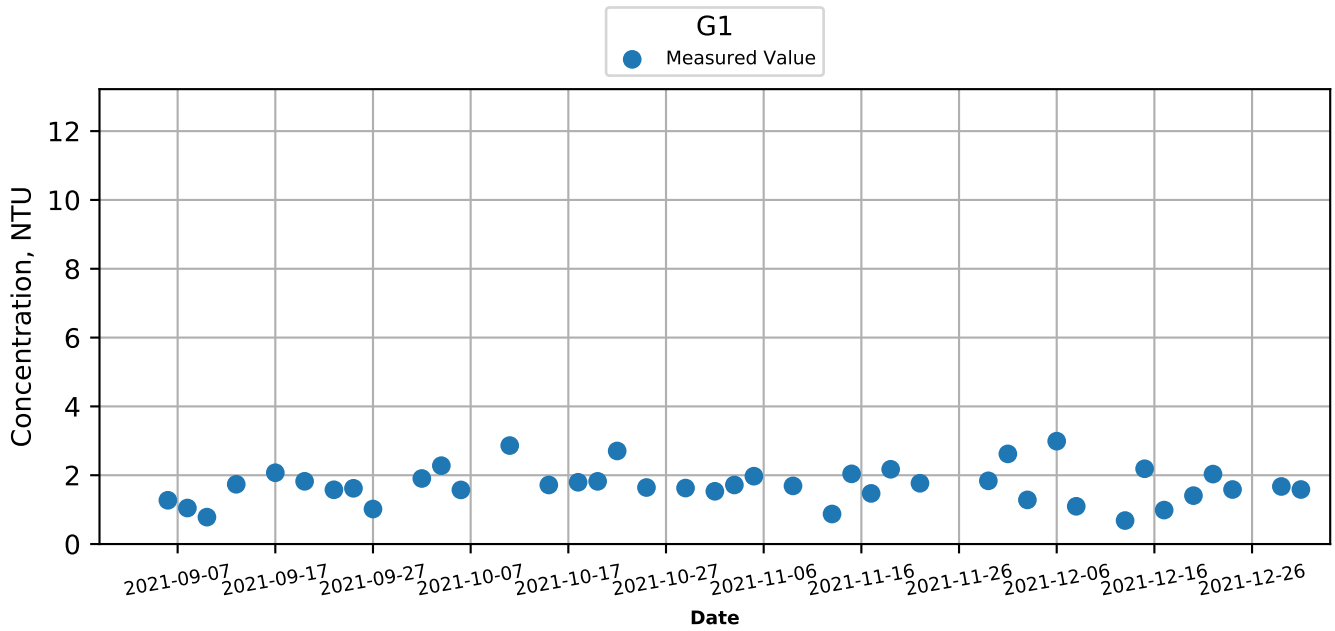
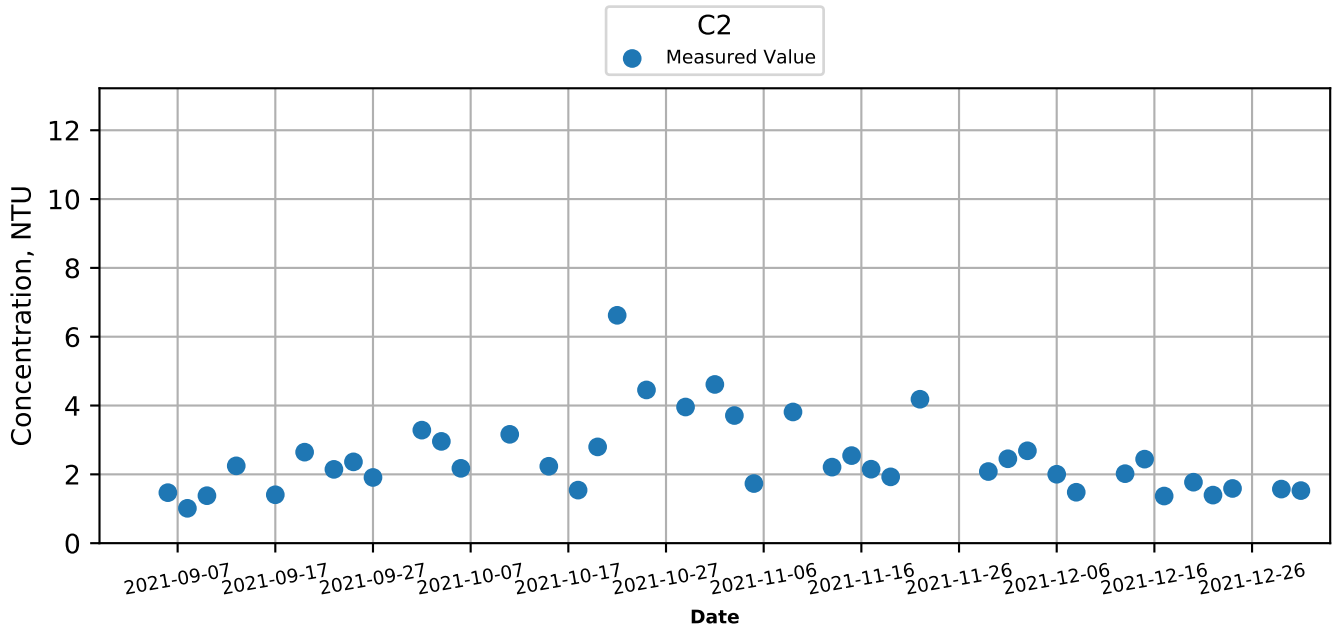
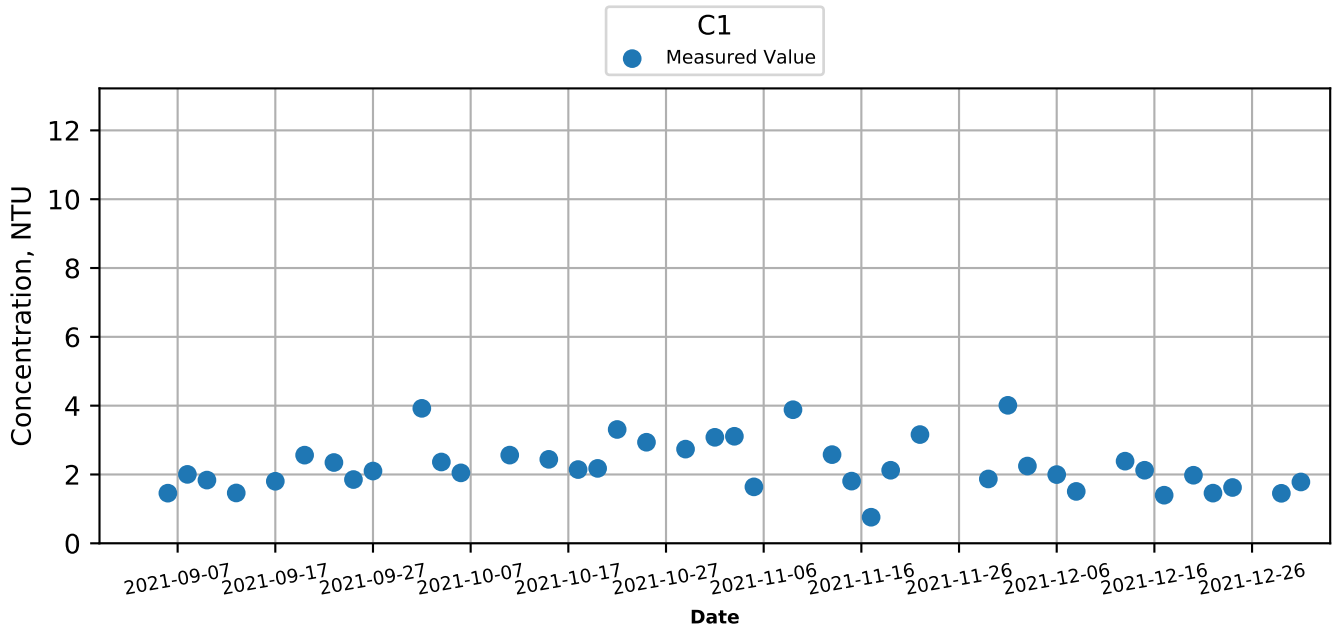
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Dissolved Oxygen (Intake level) at Monitoring Stations during Mid-Flood



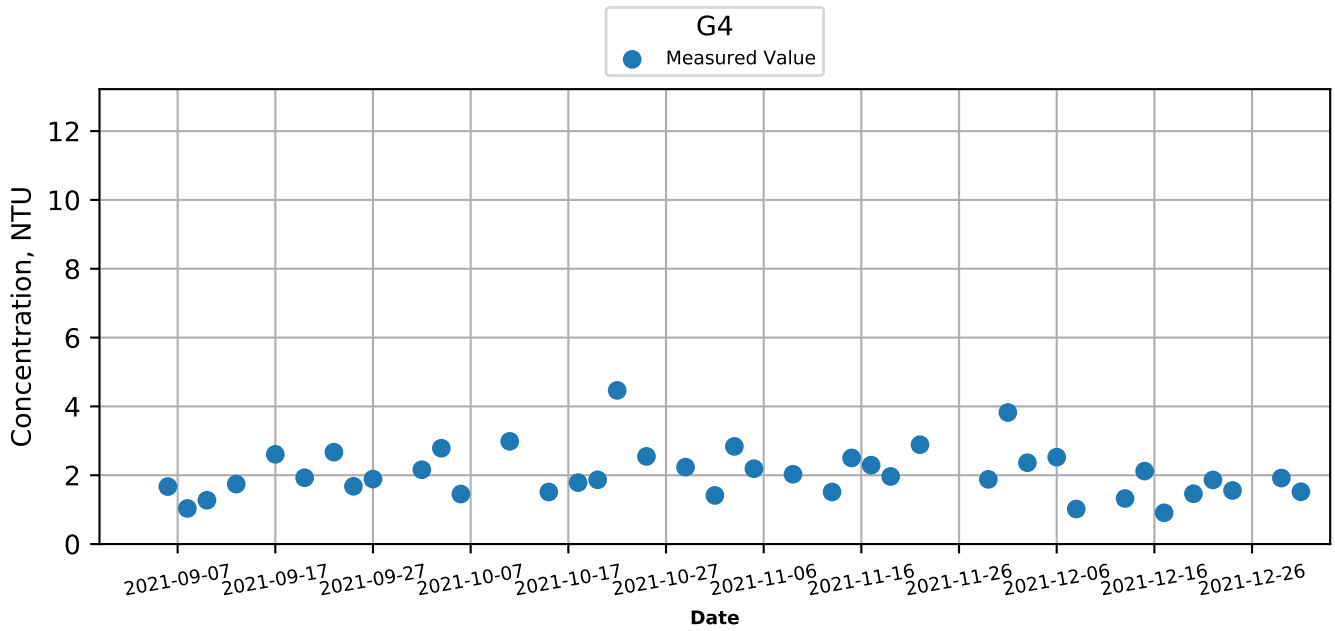
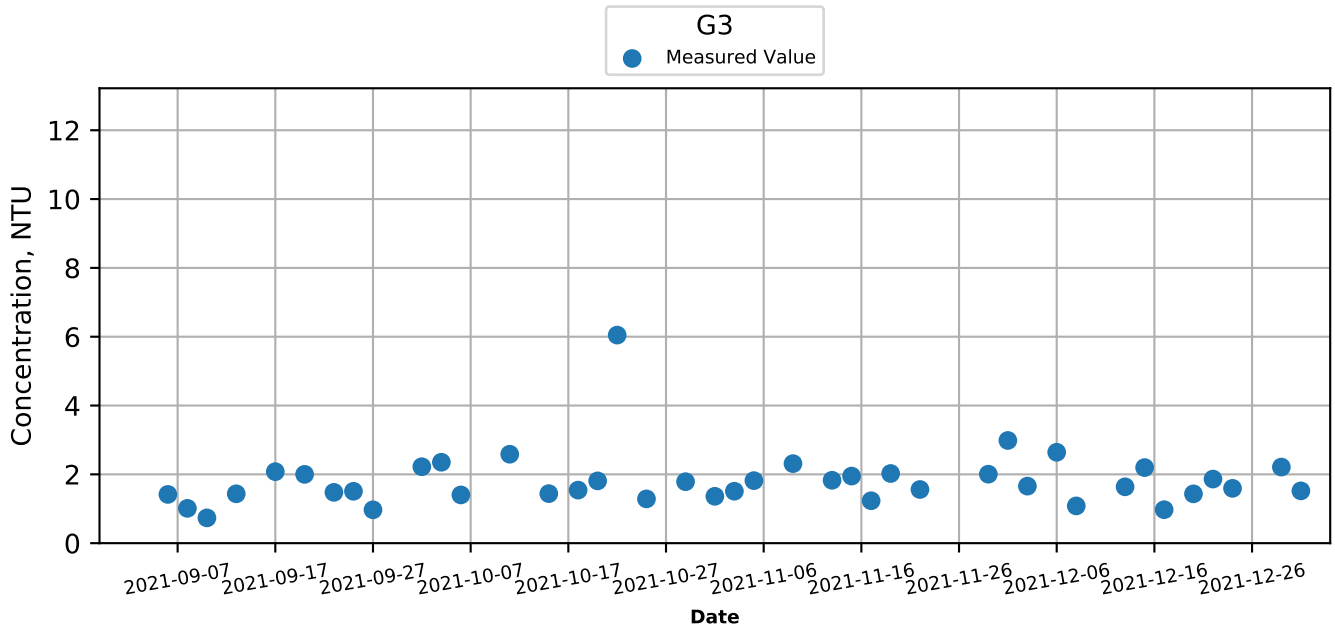
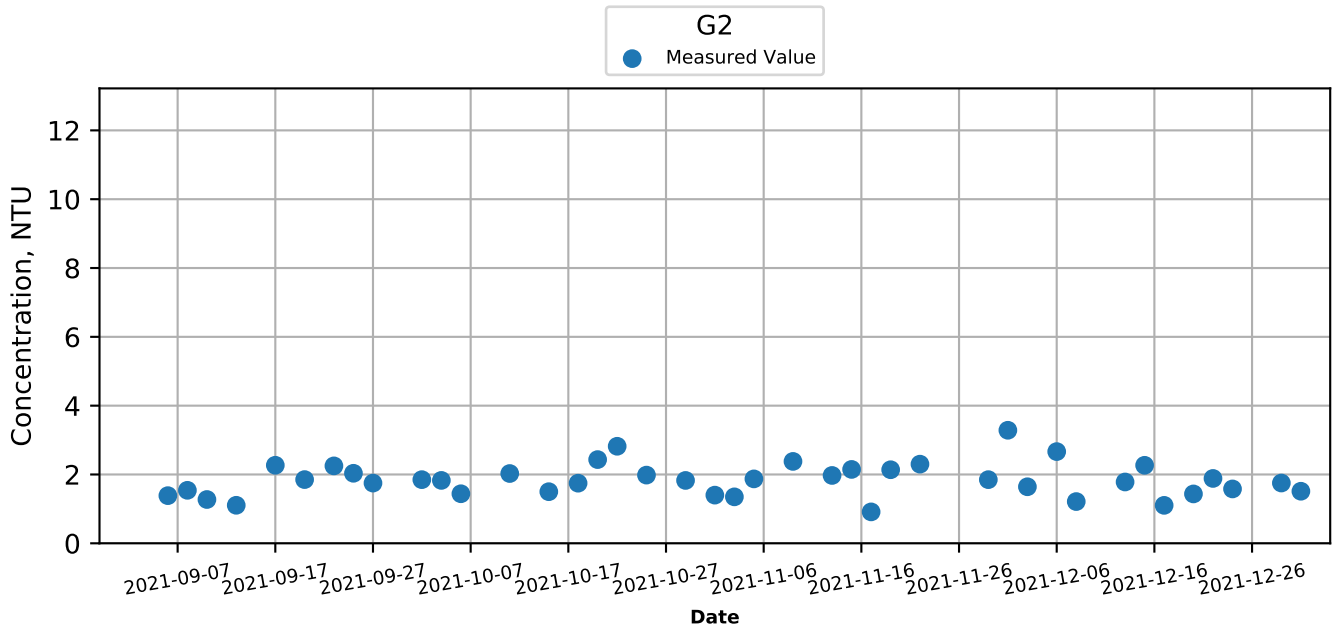
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Ebb



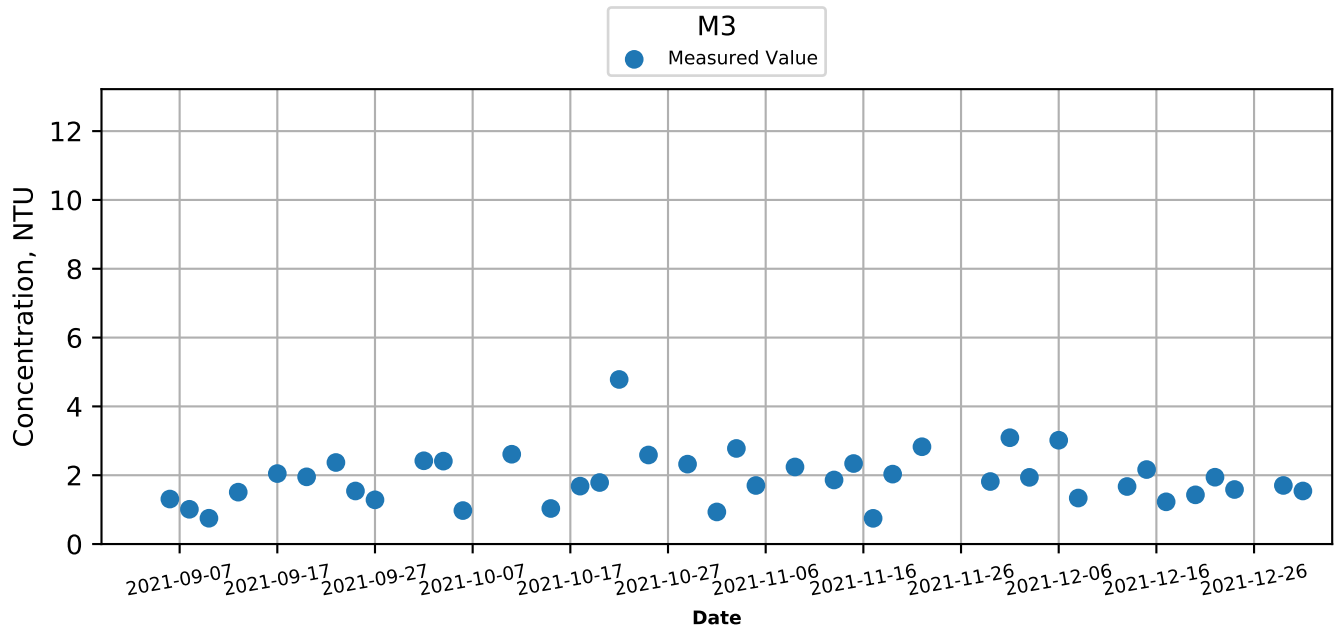
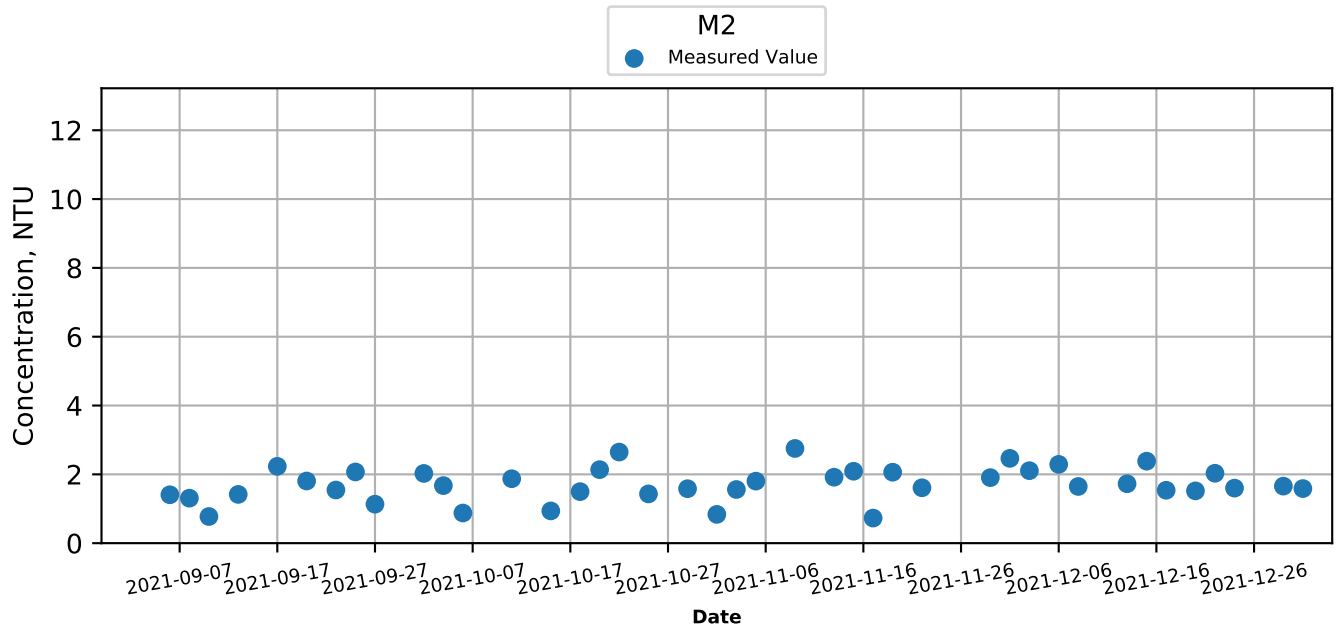
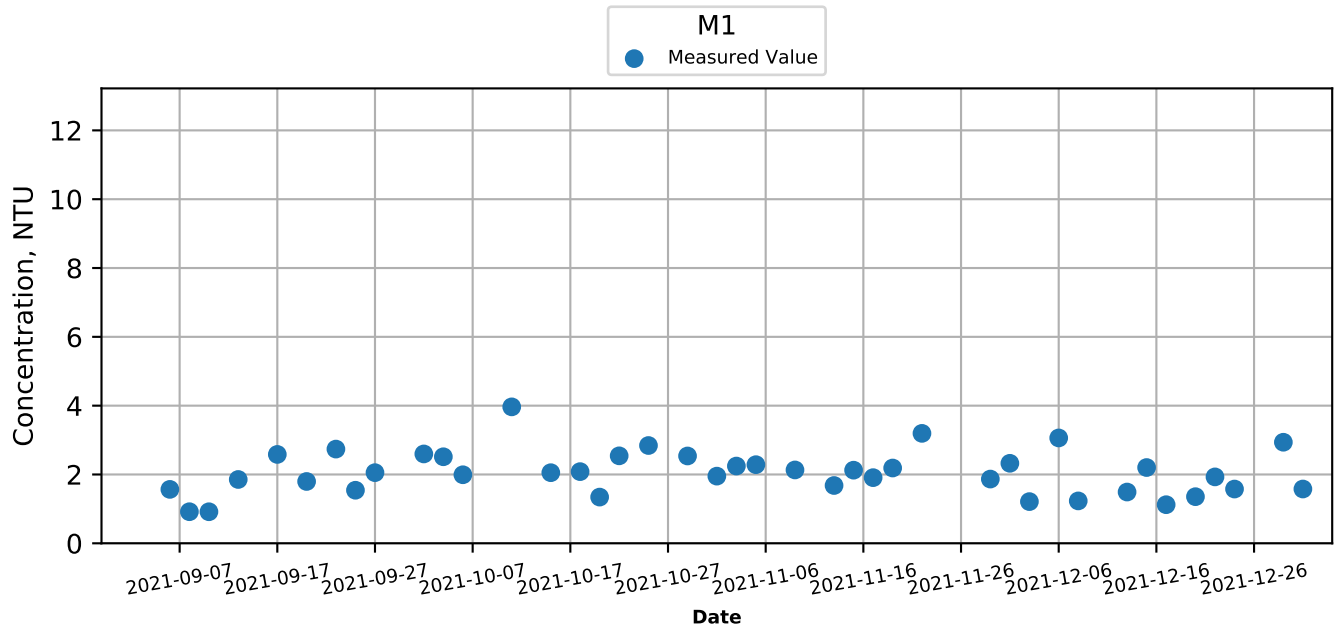
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Ebb



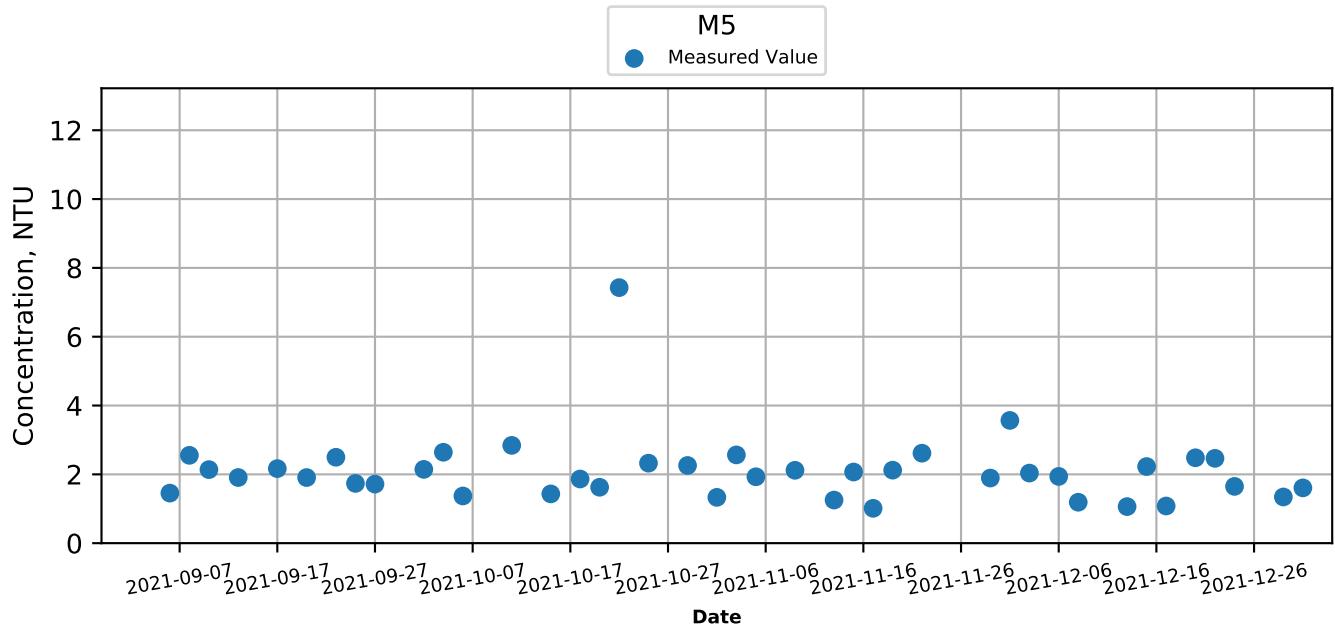
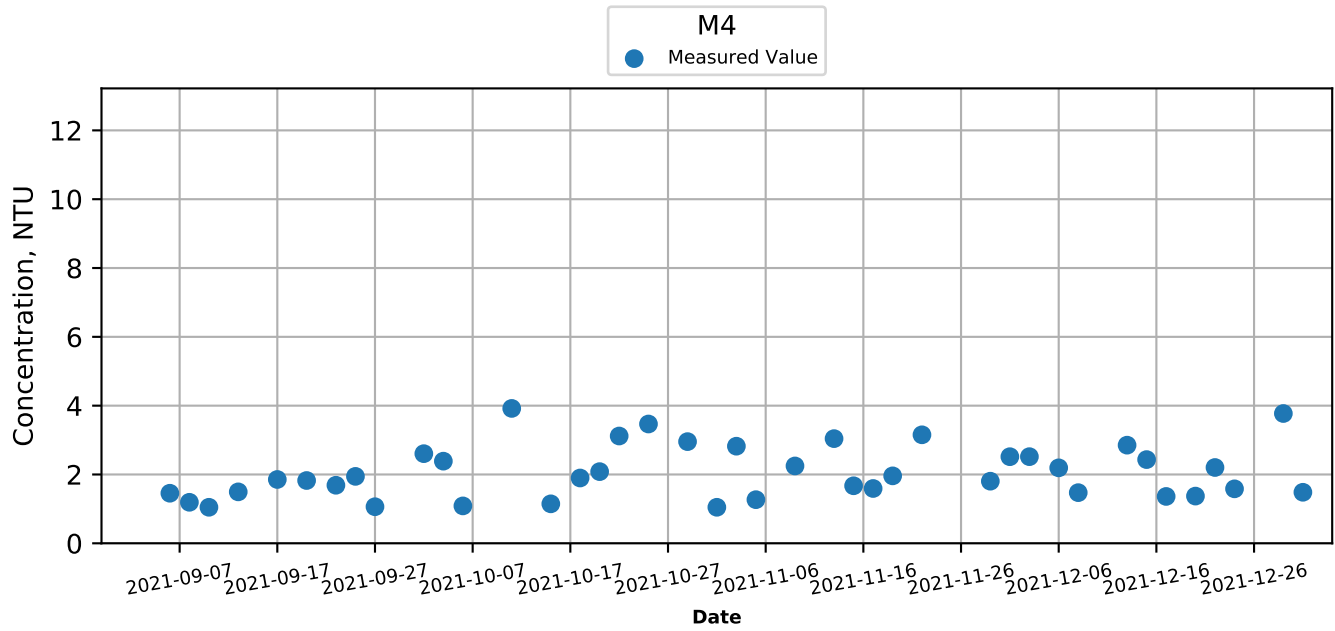
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Ebb



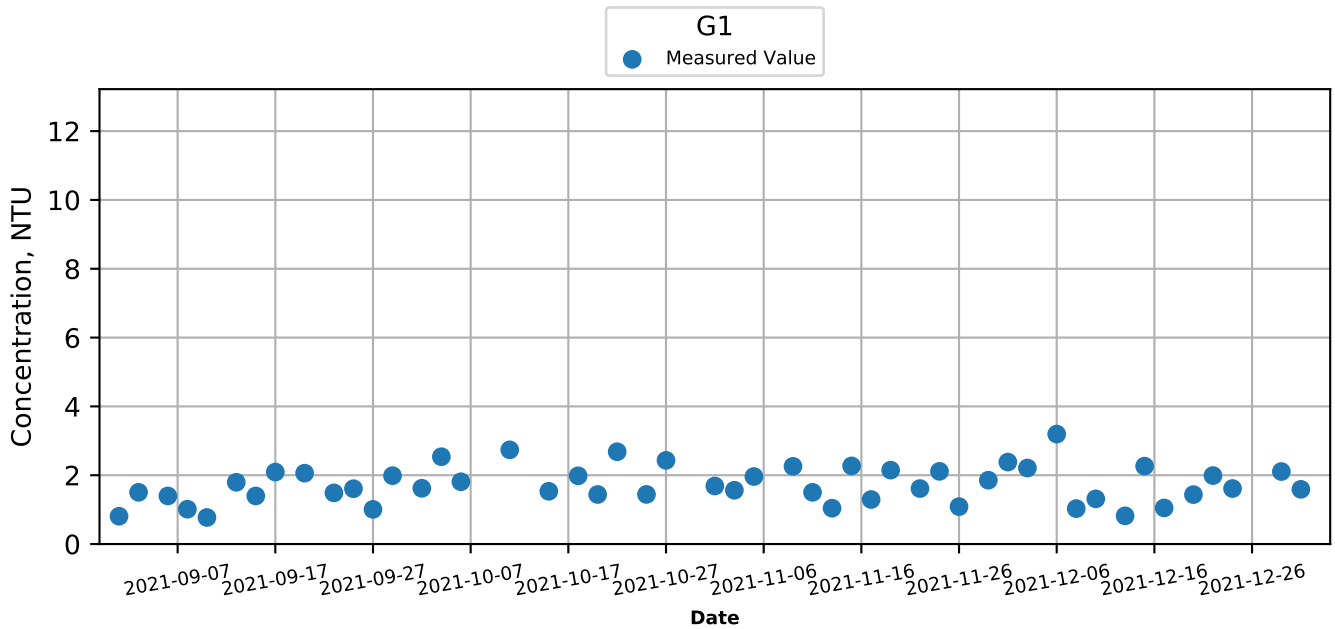
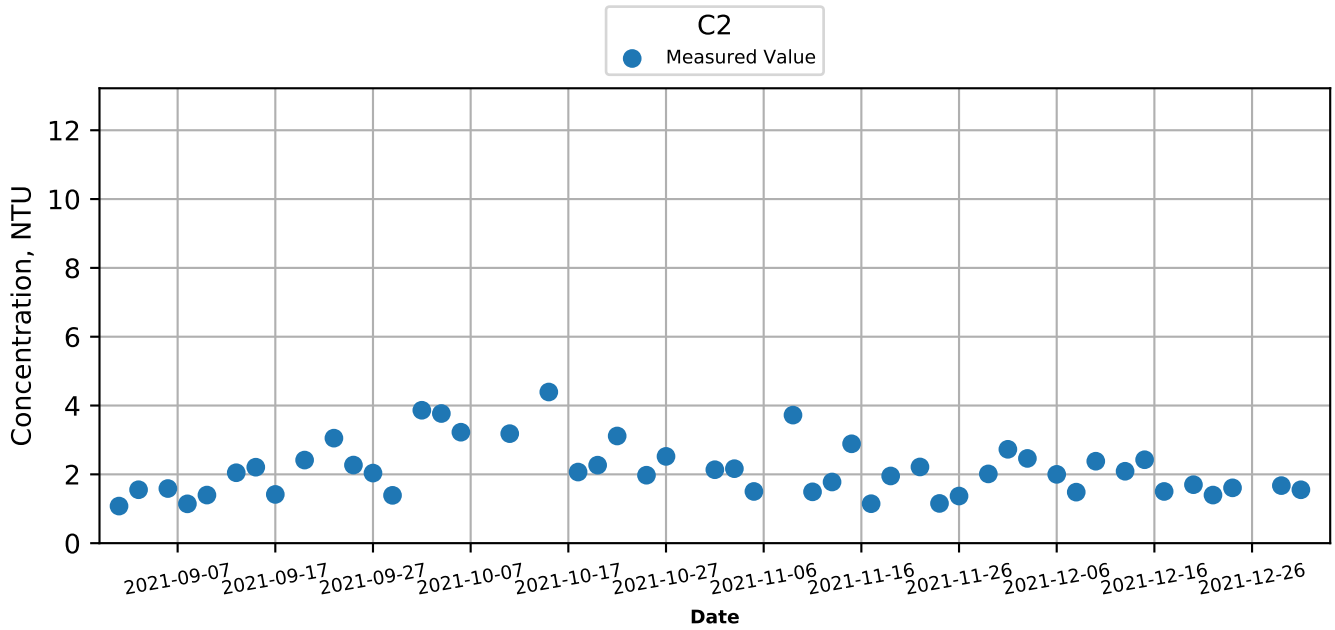
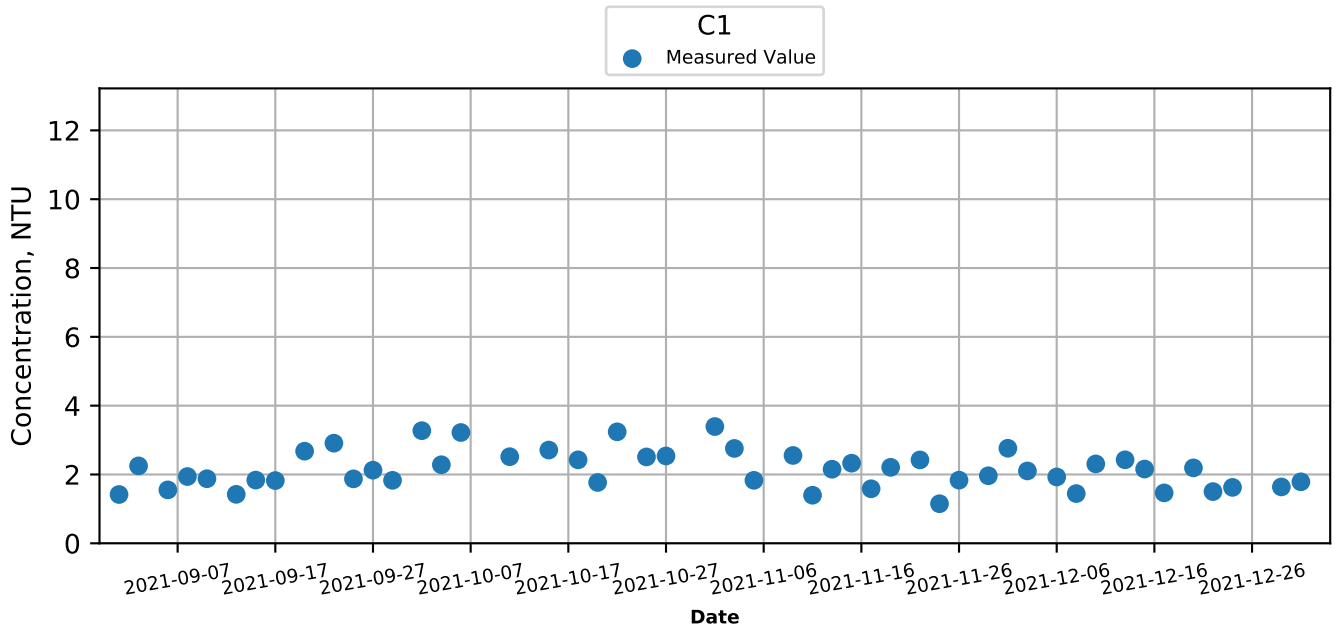
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Ebb



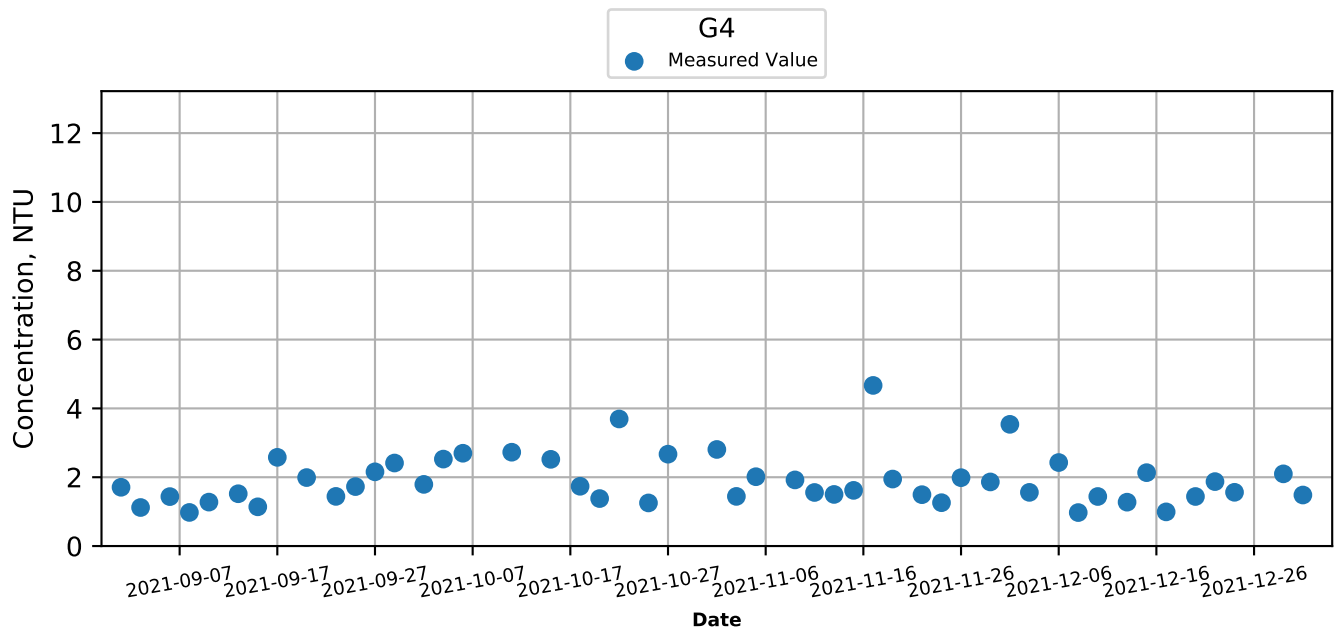
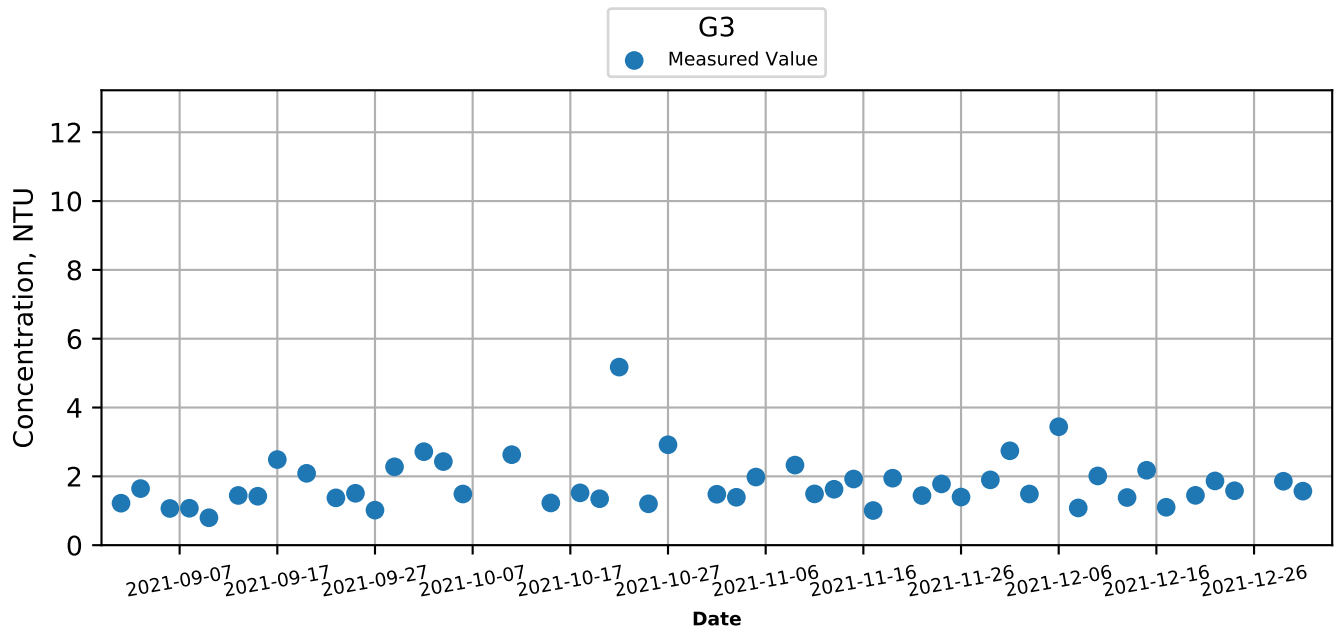
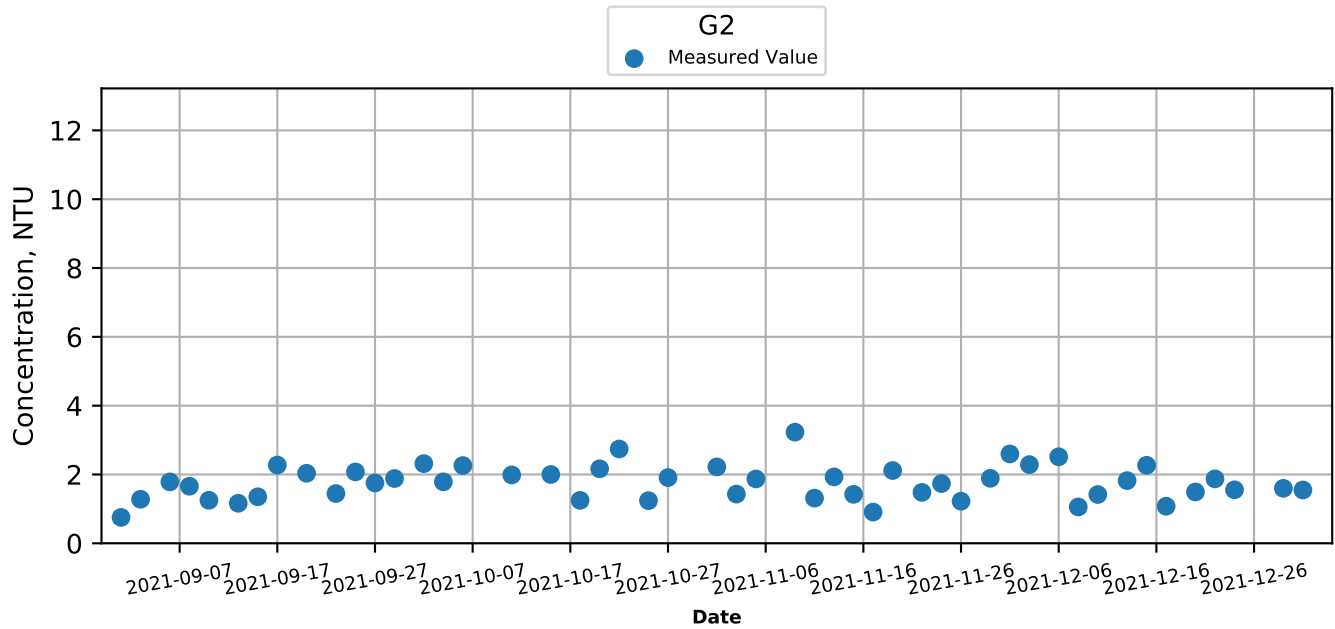
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Flood



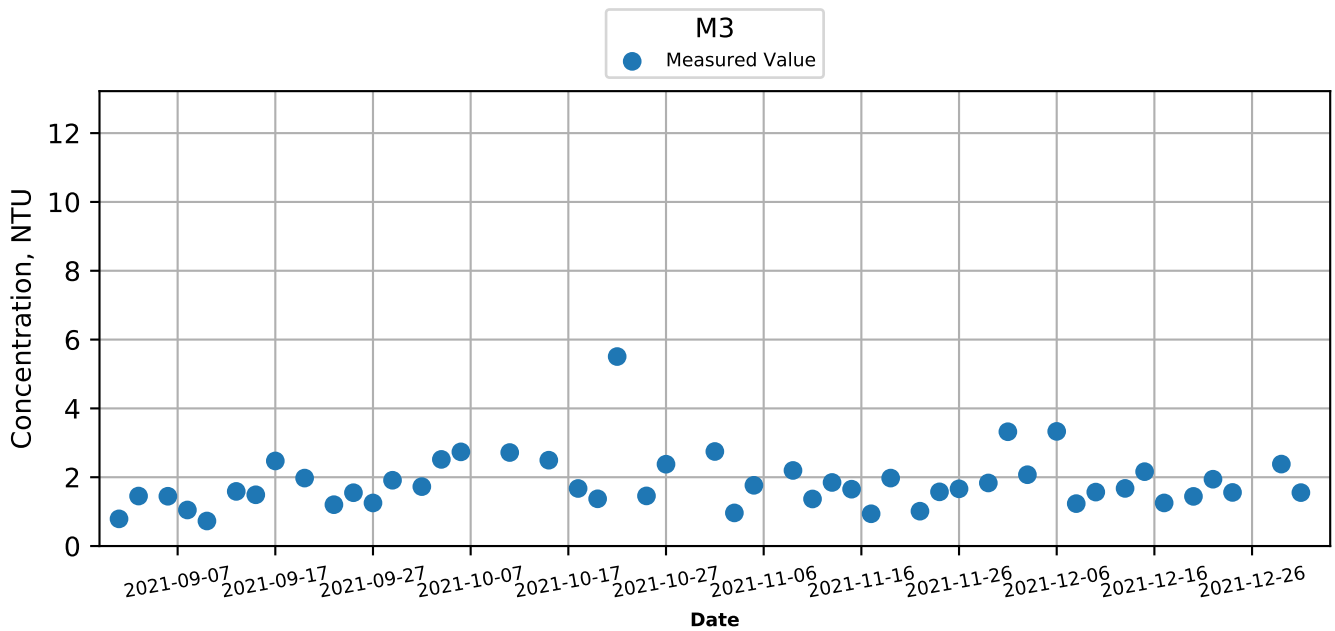
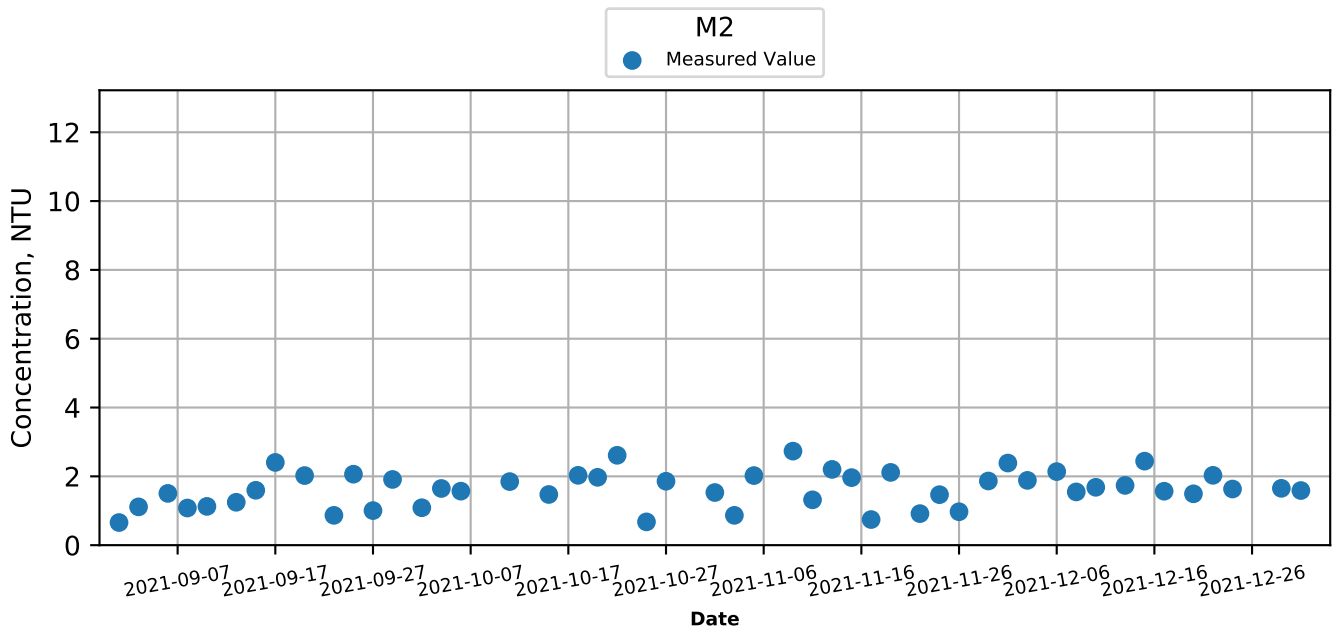
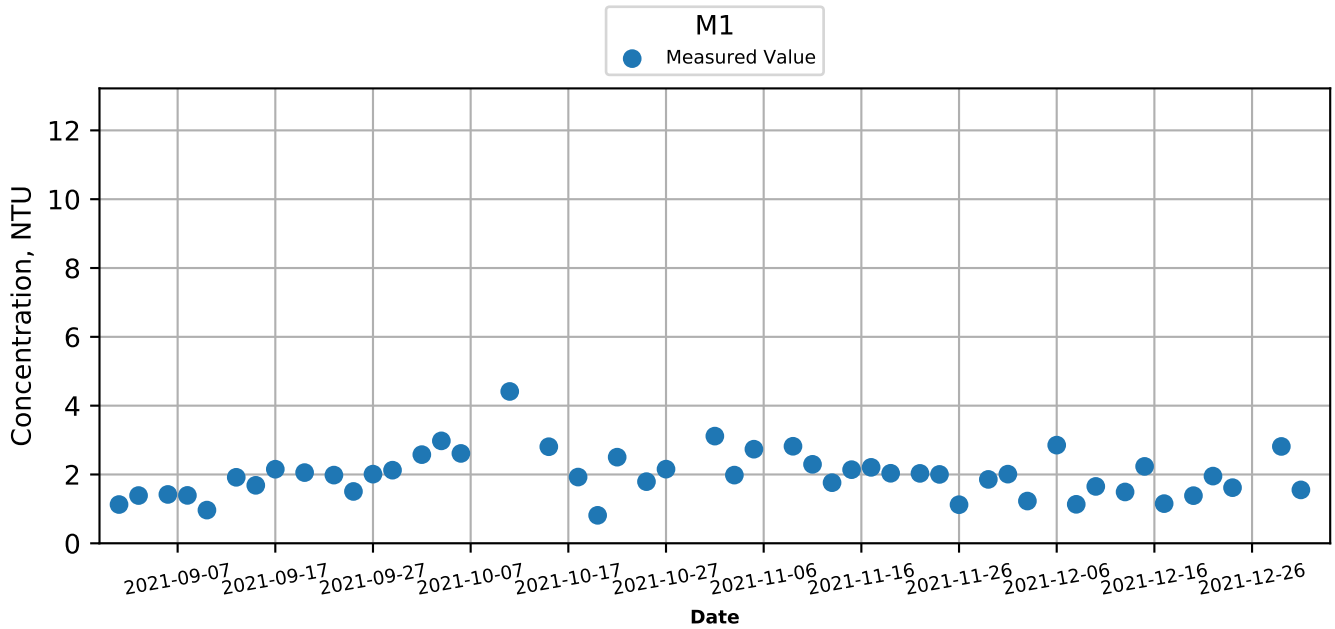
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Flood



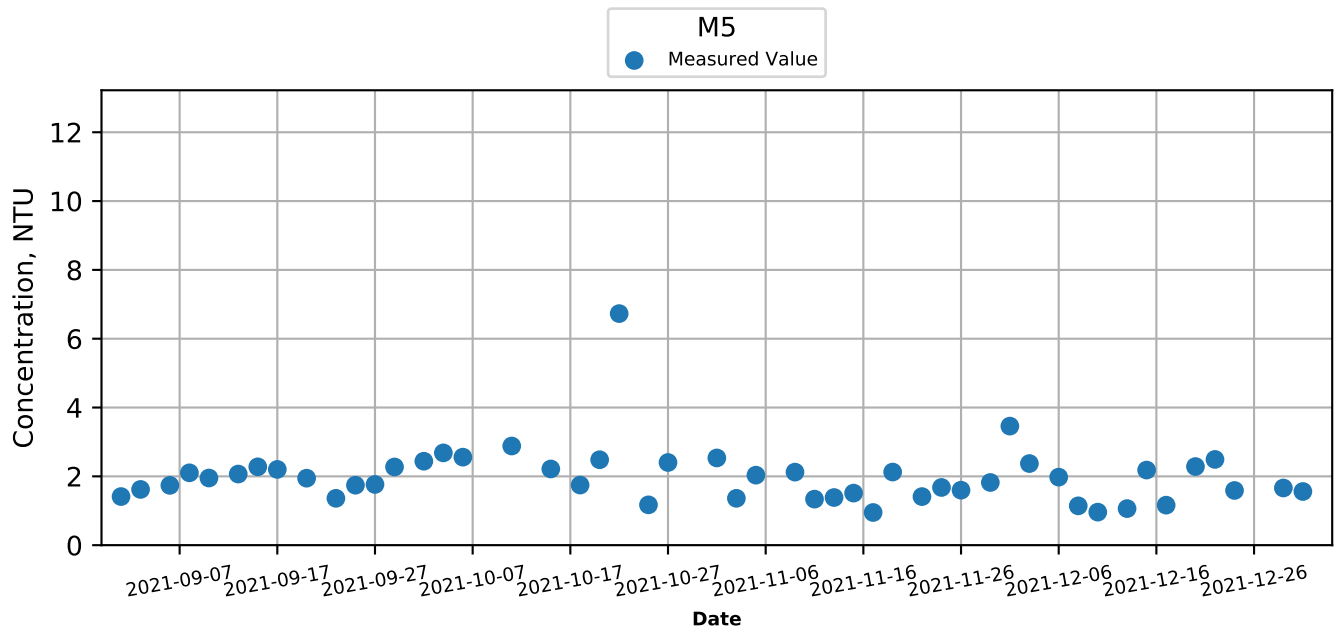
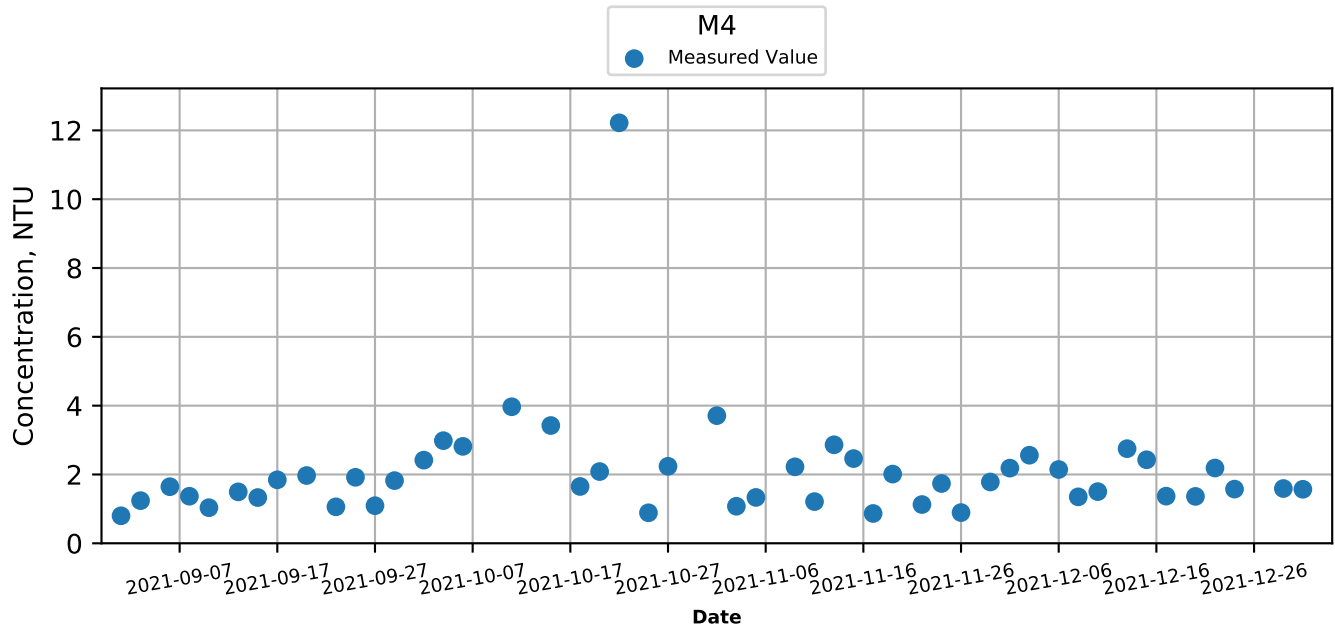
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Flood



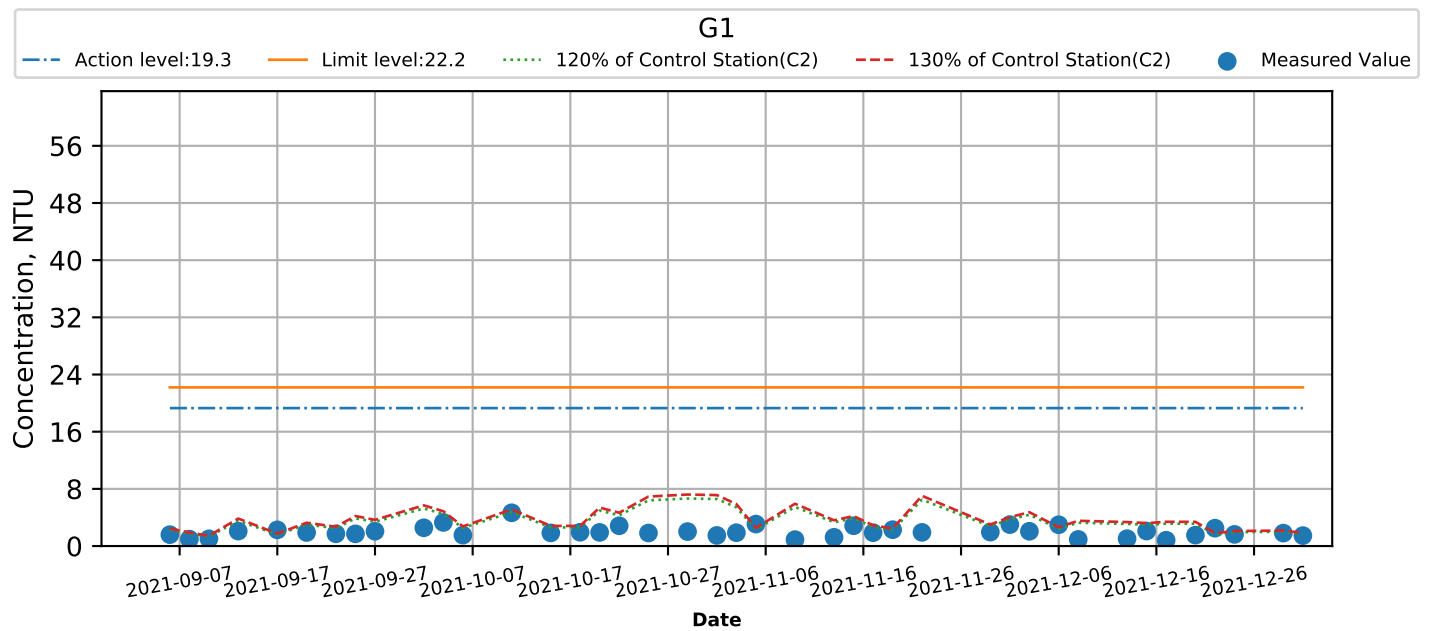
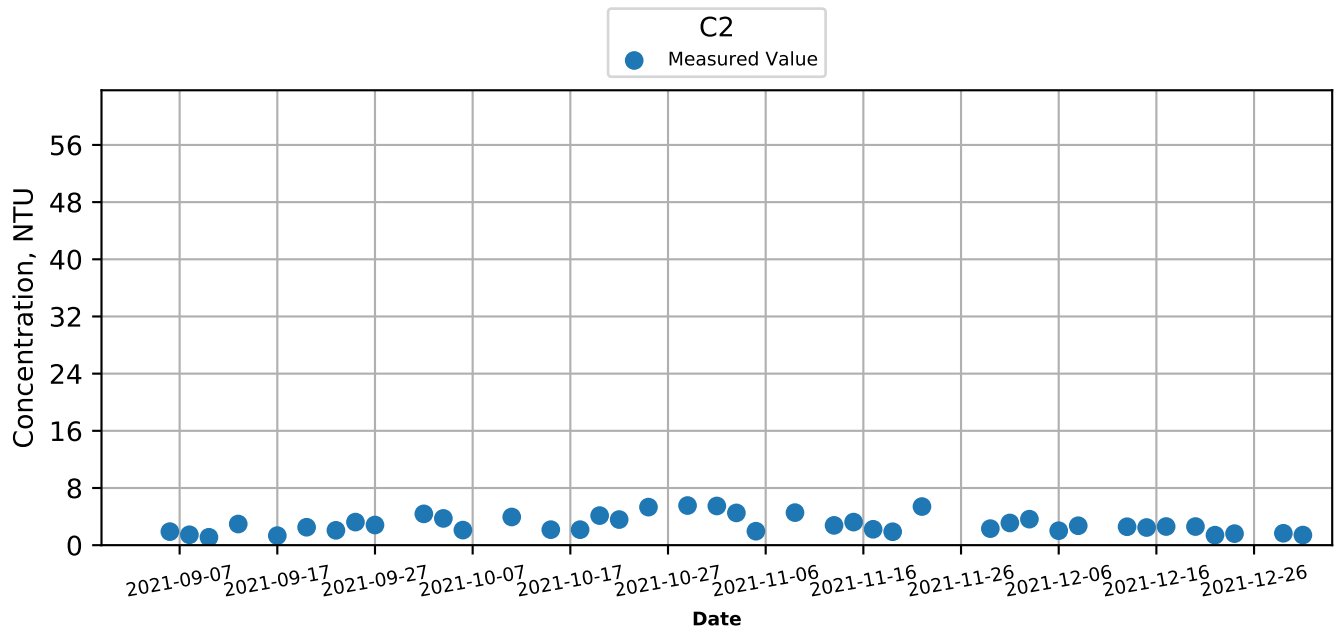
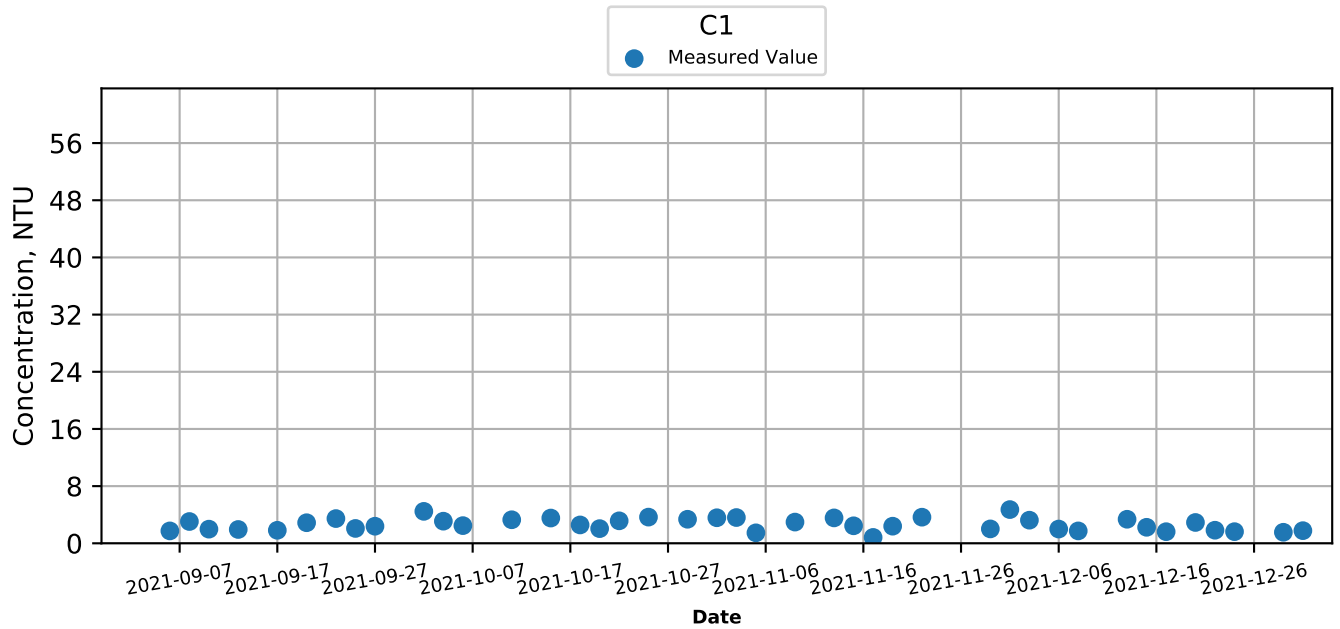
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Depth-Averaged) at Monitoring Stations during Mid-Flood



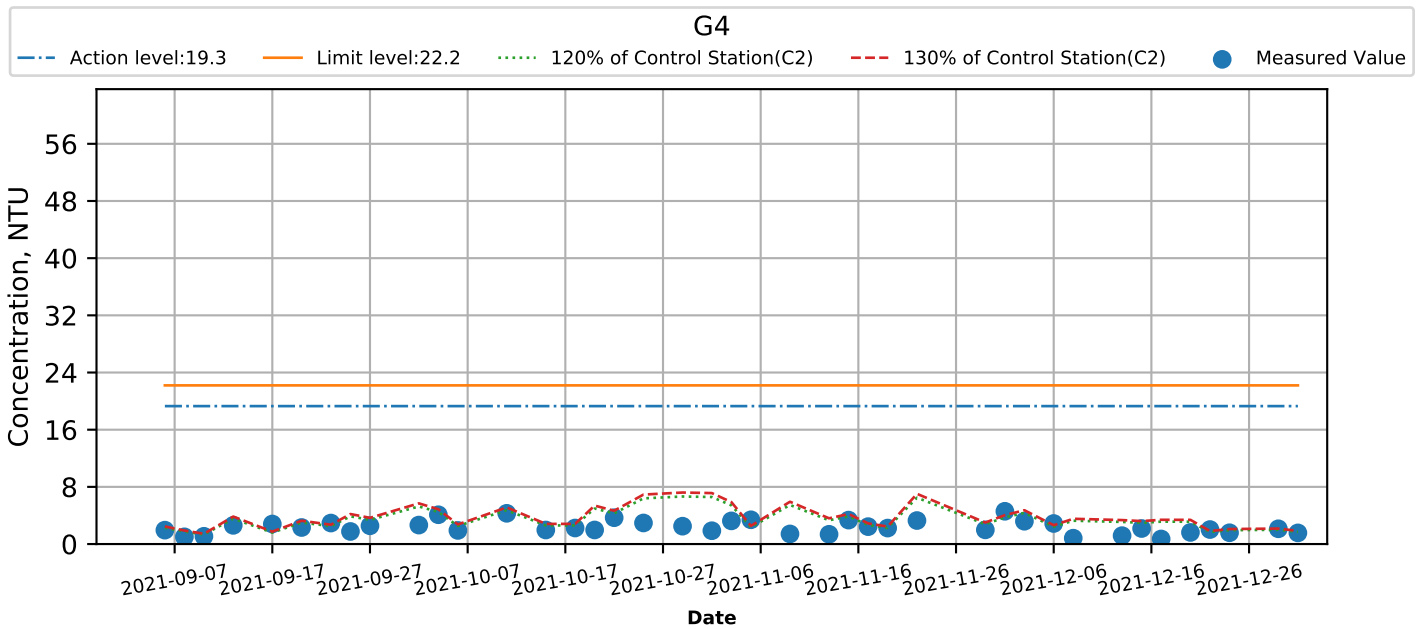
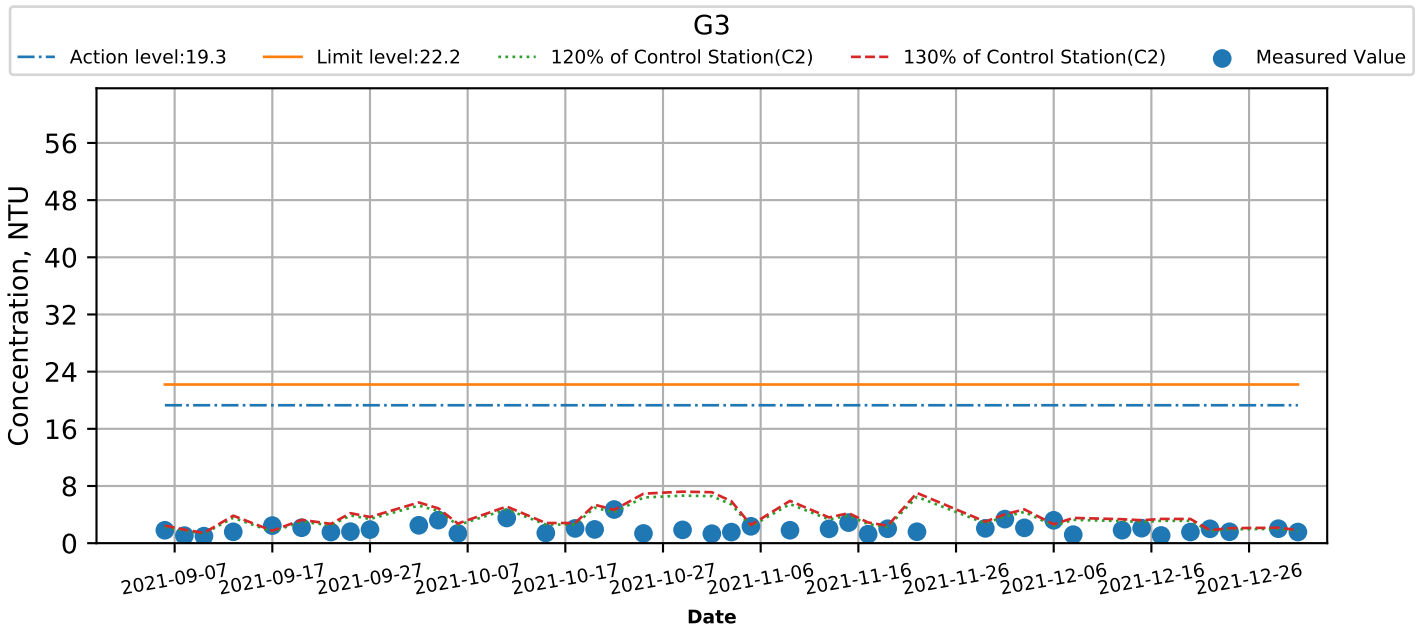
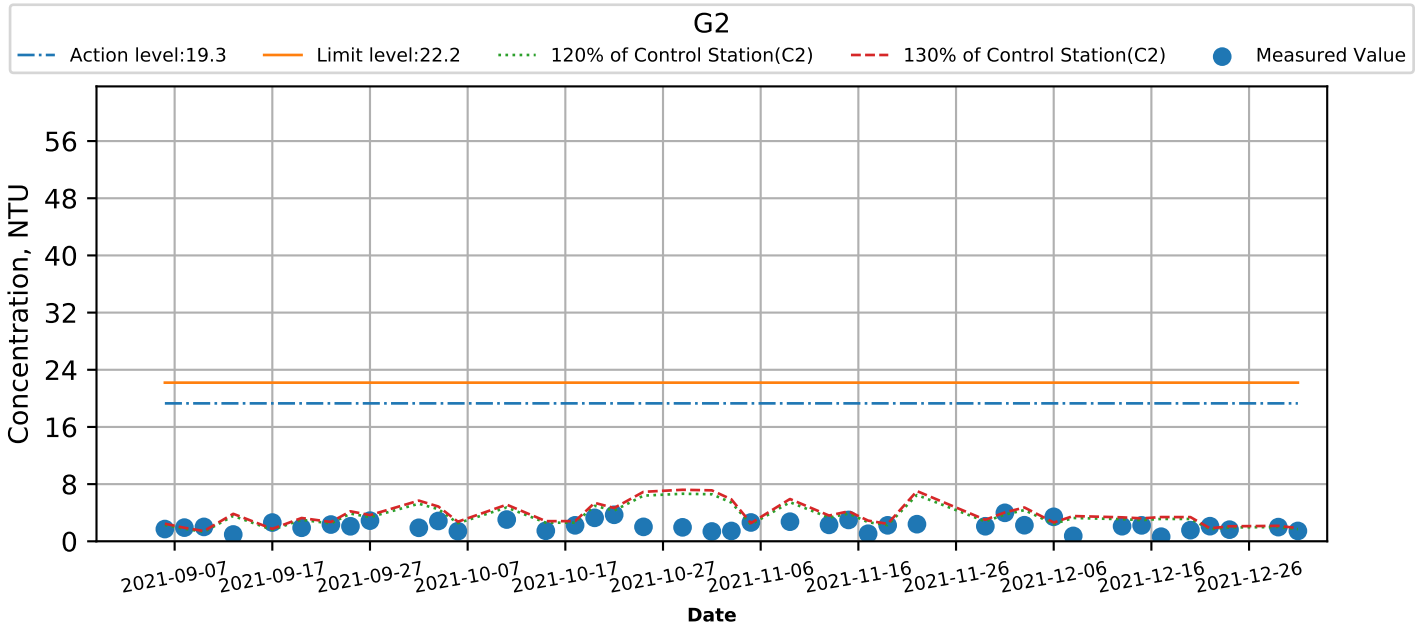
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Ebb



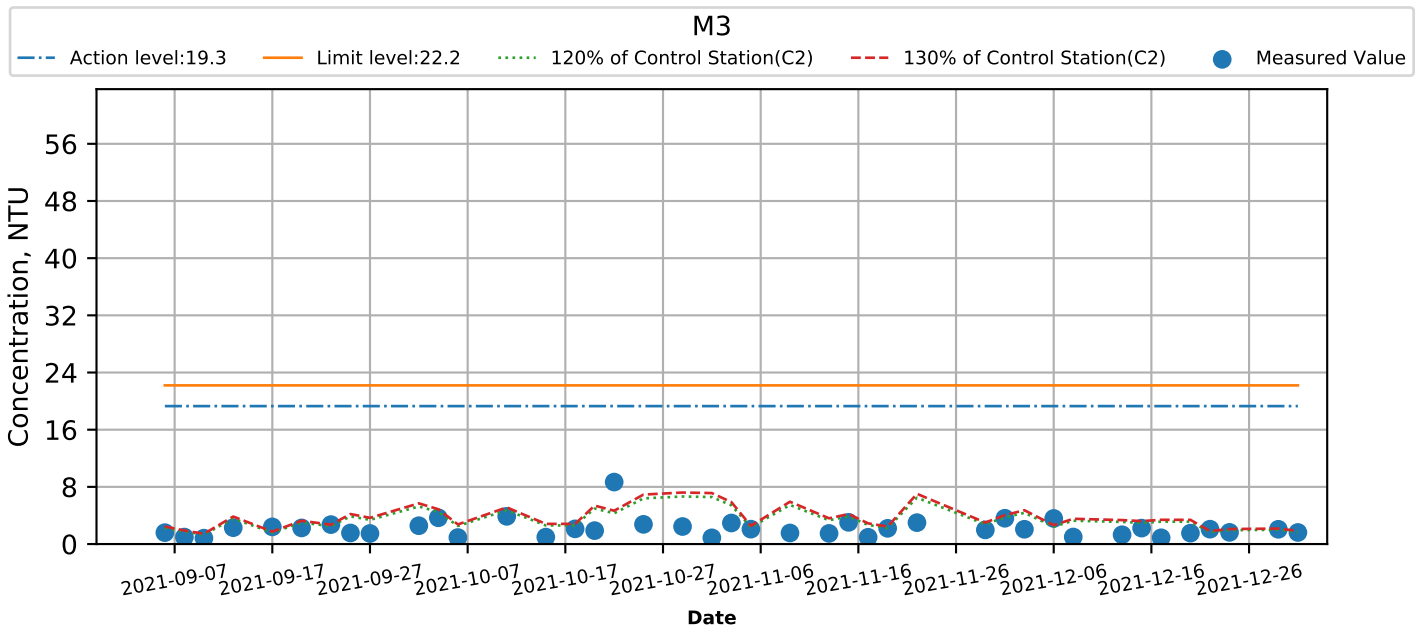
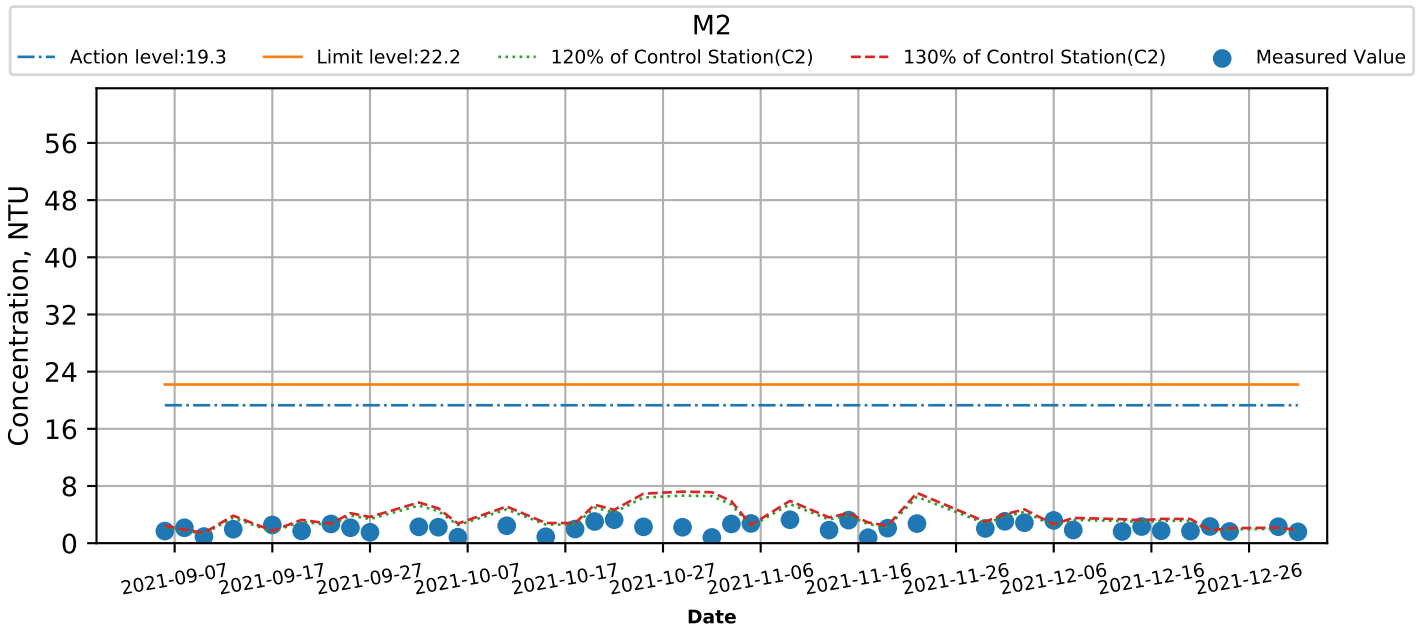
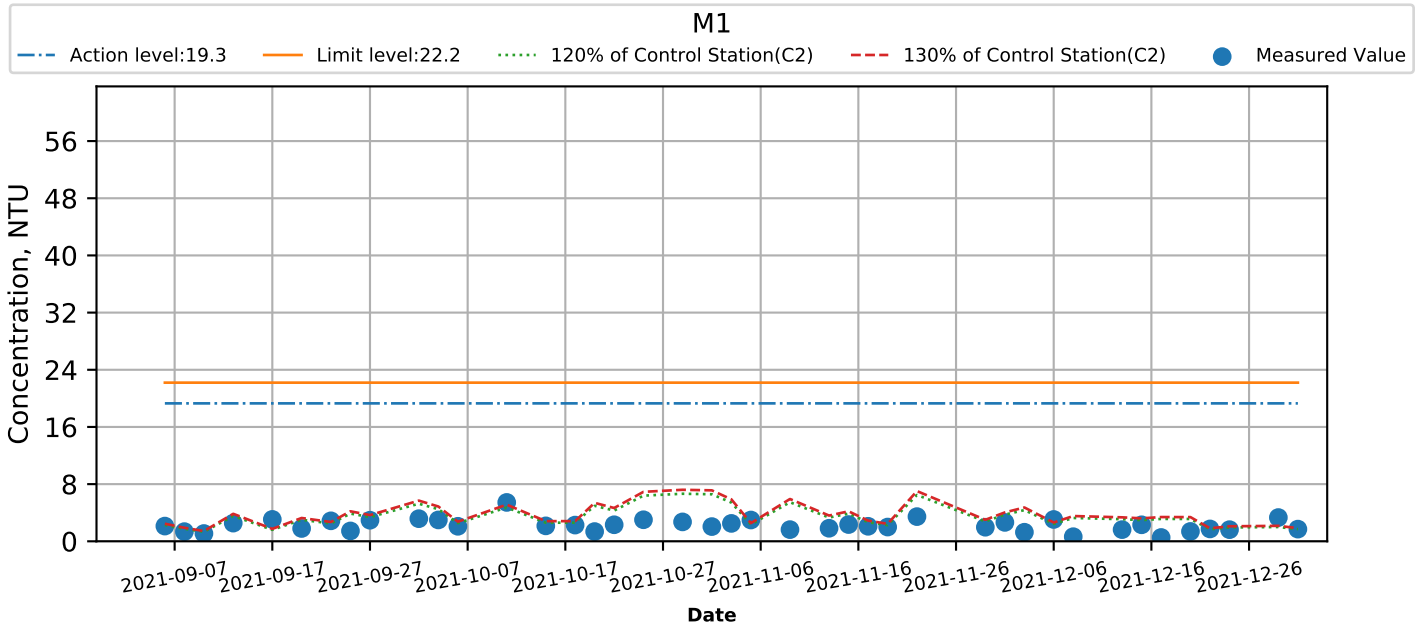
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Ebb



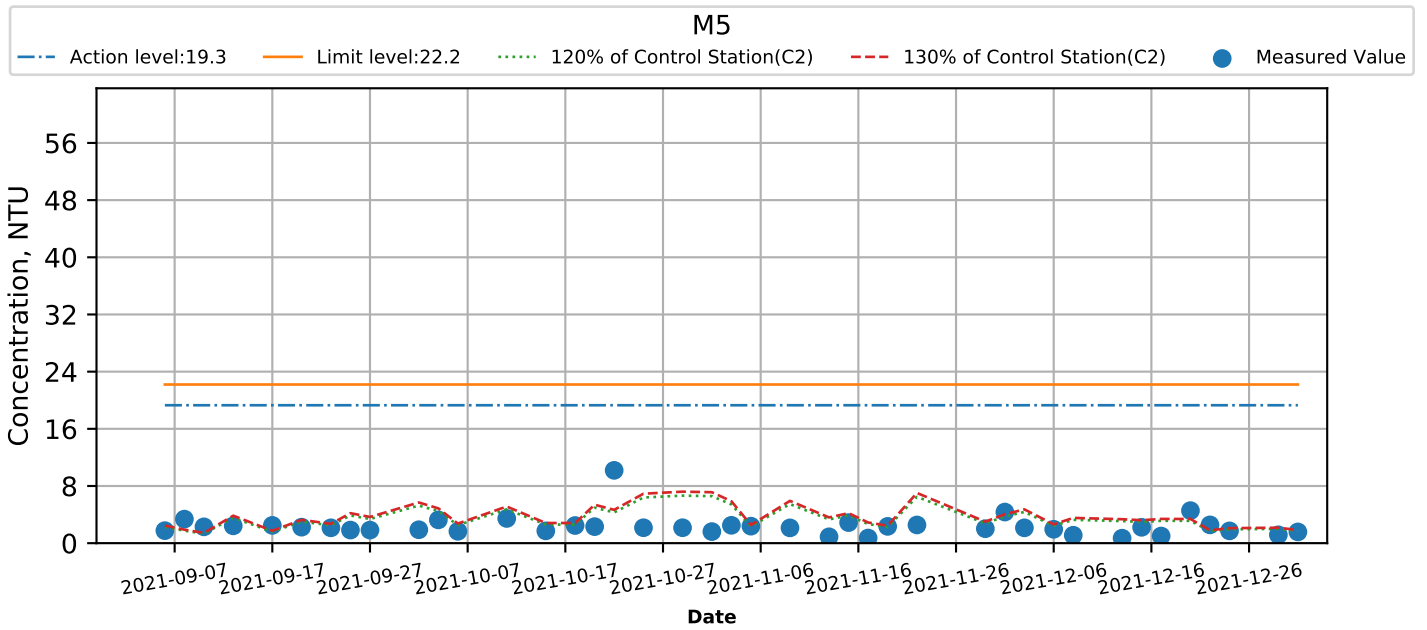
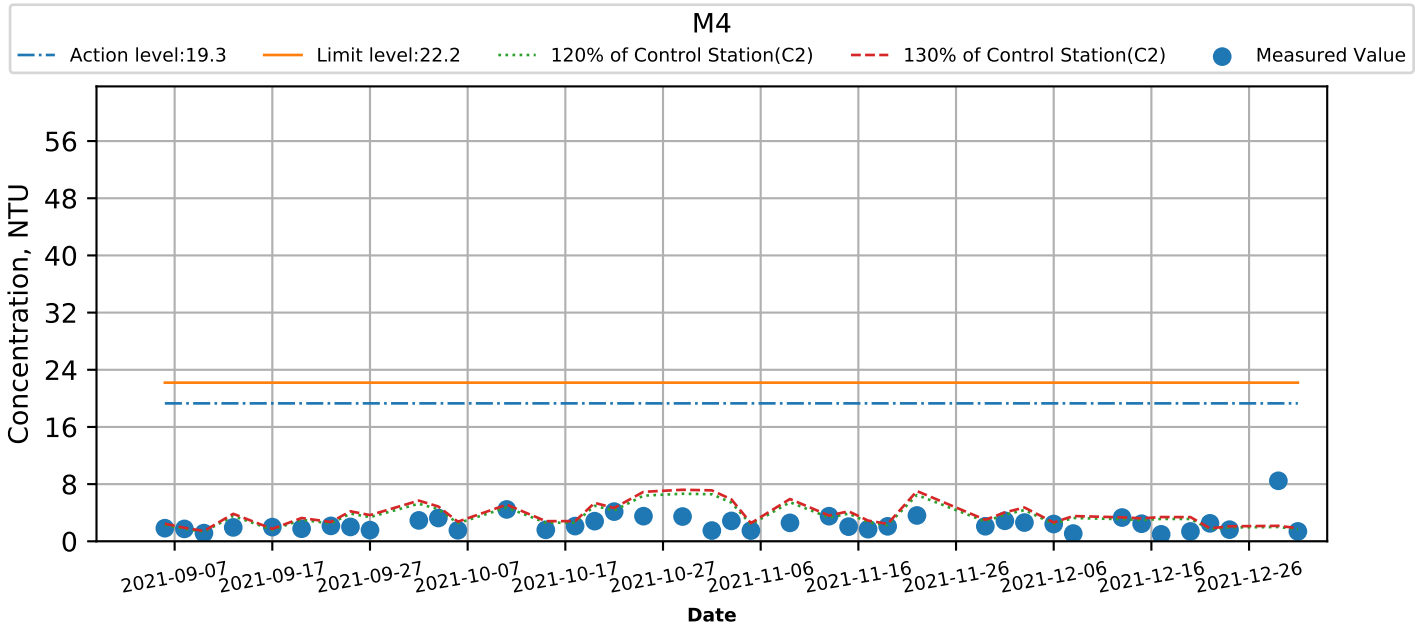
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Ebb



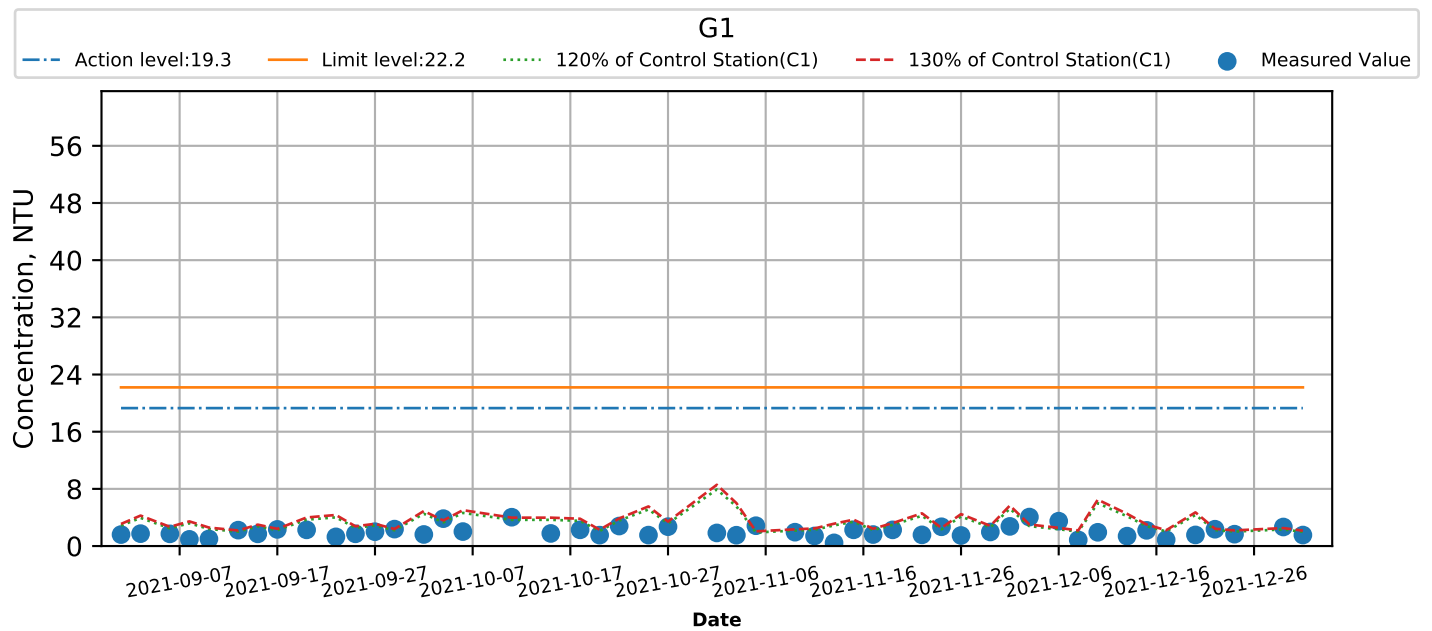
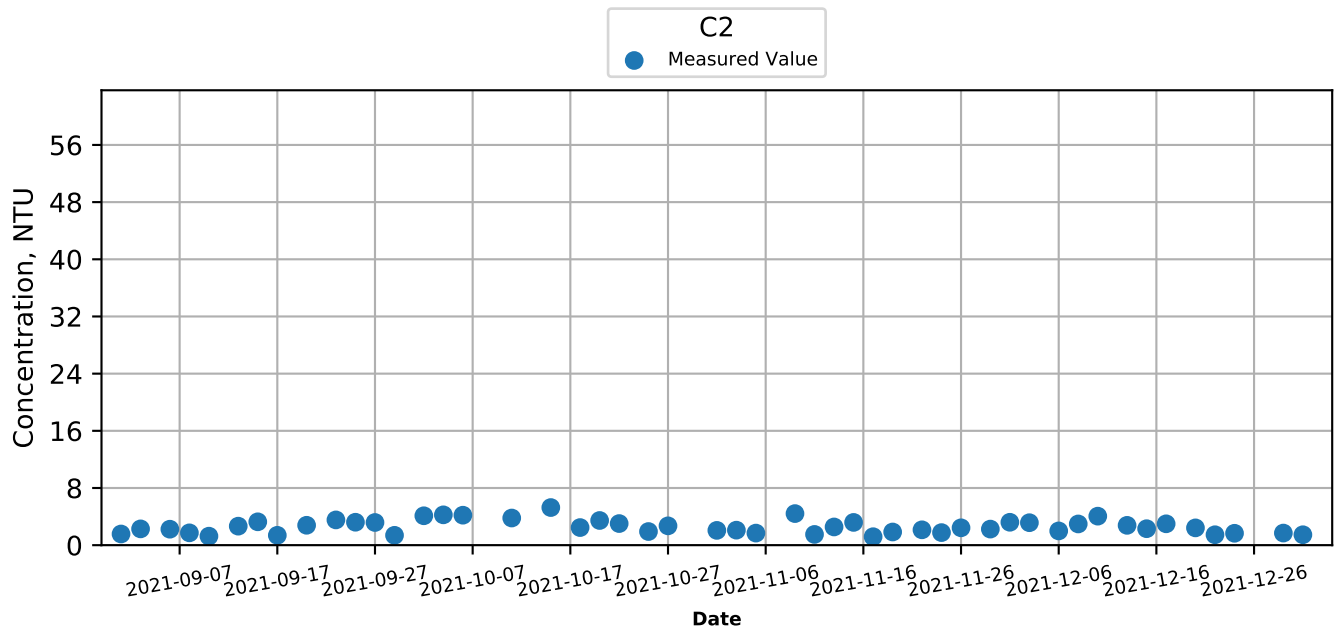
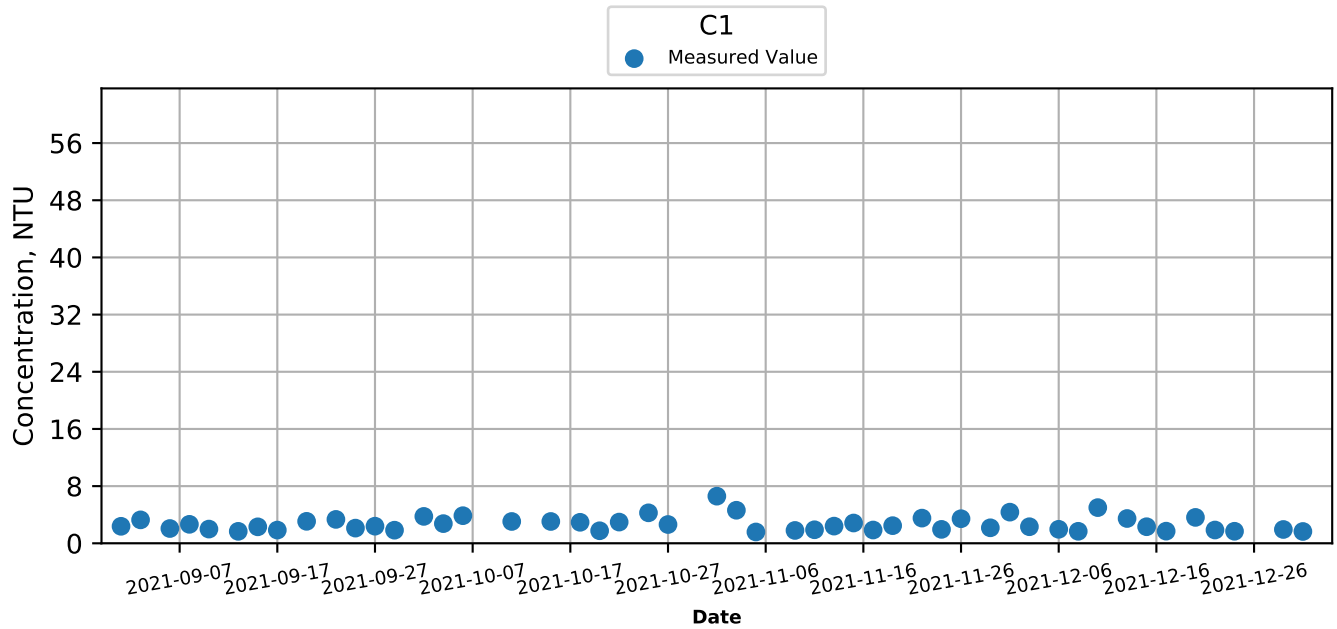
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Ebb



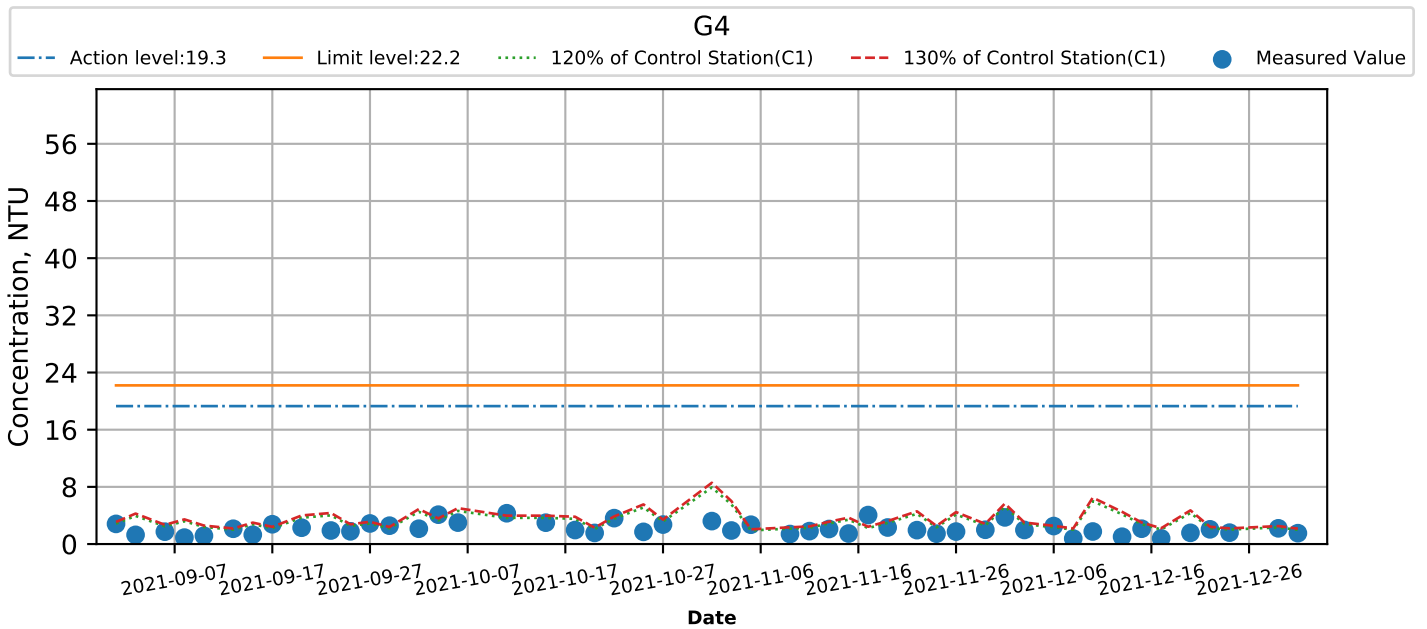
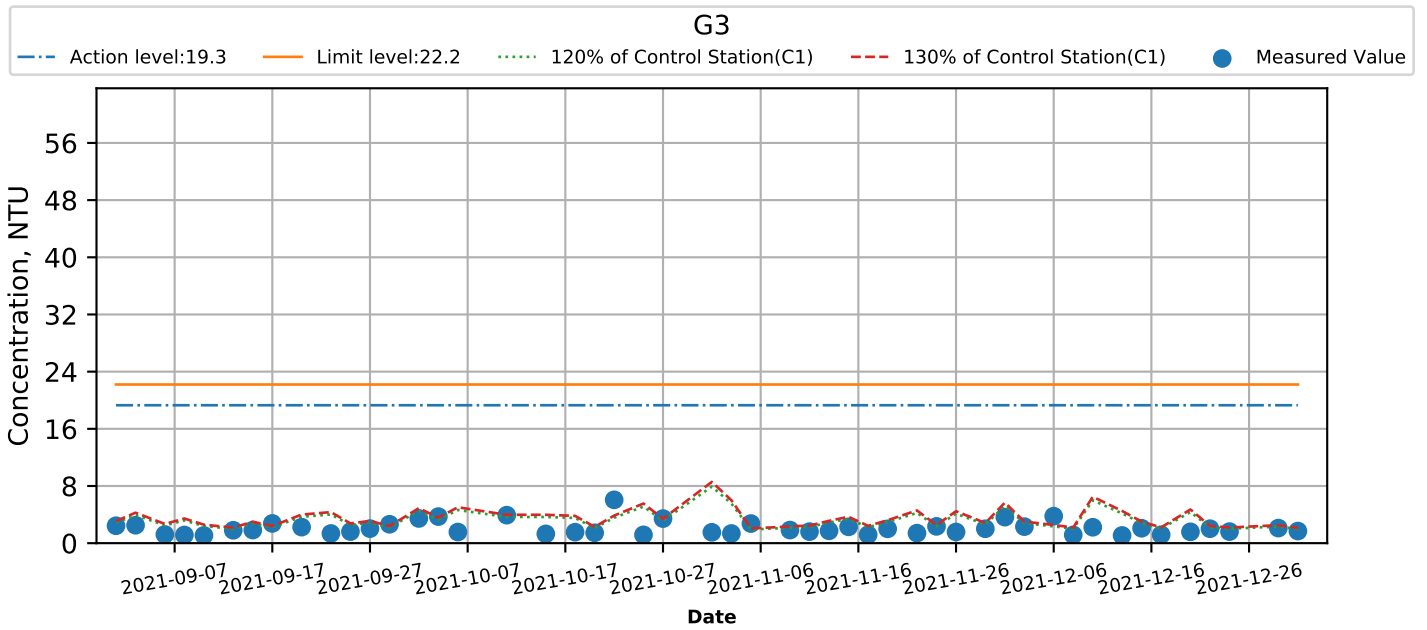
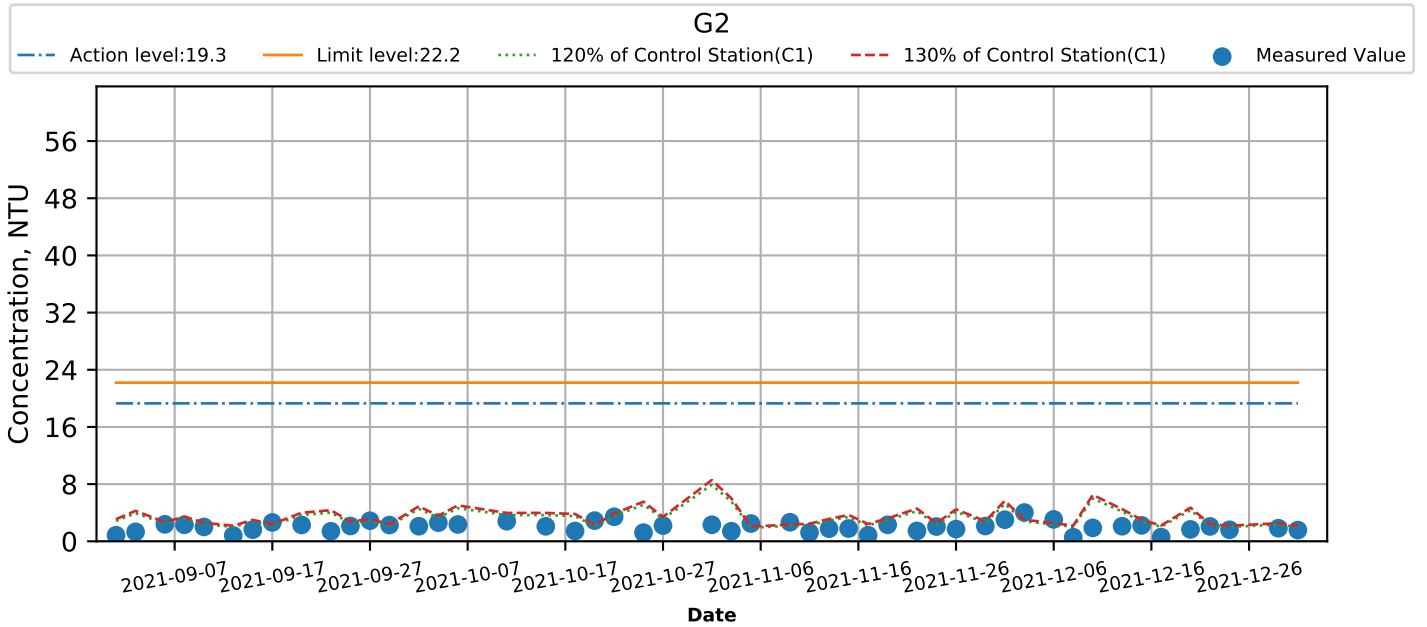
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Flood



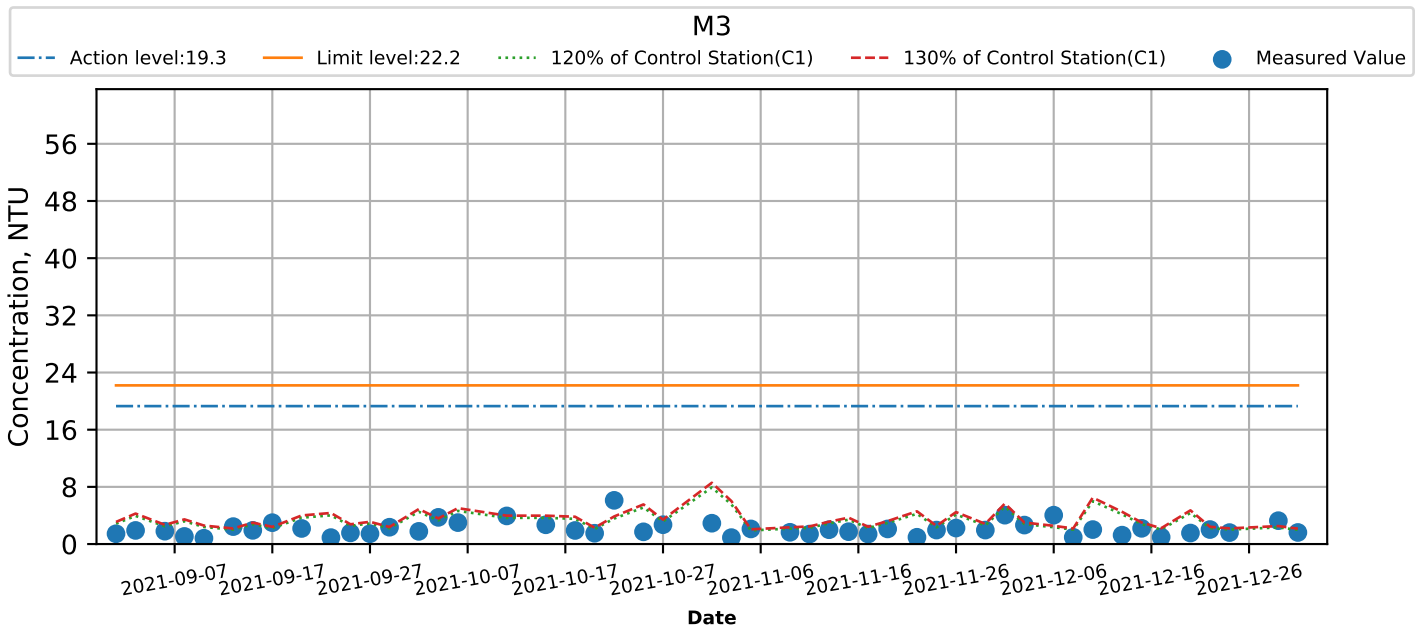
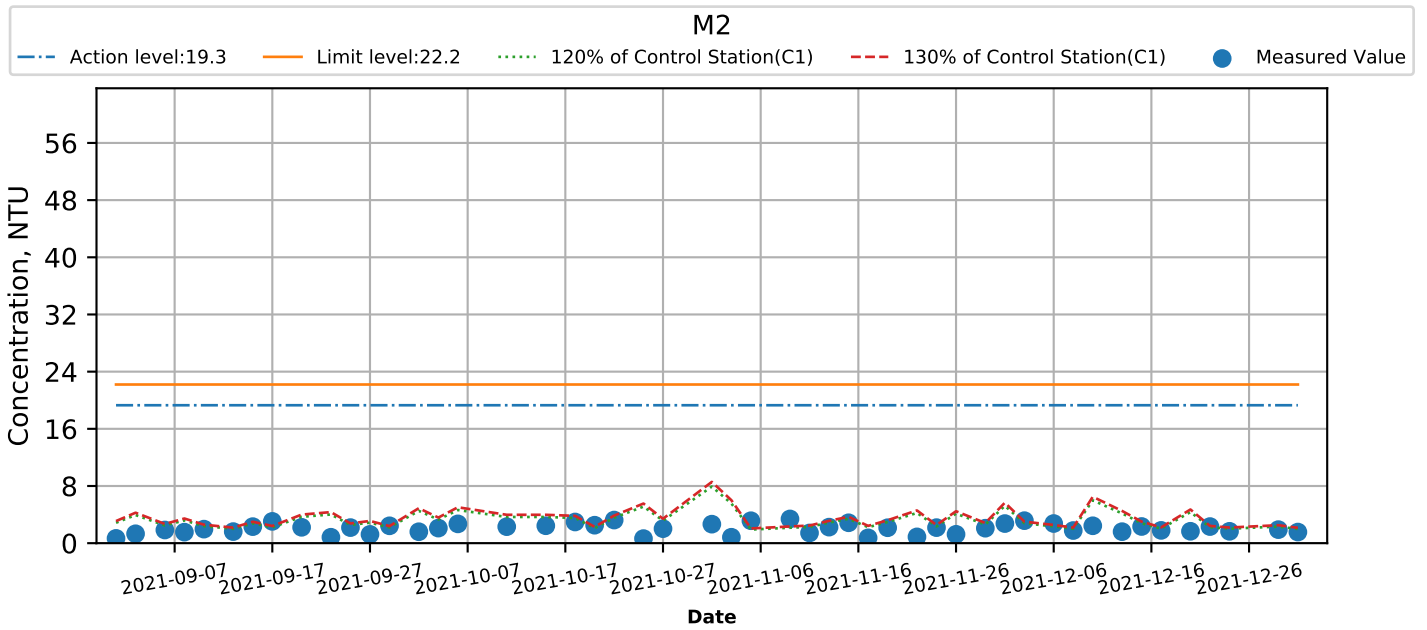
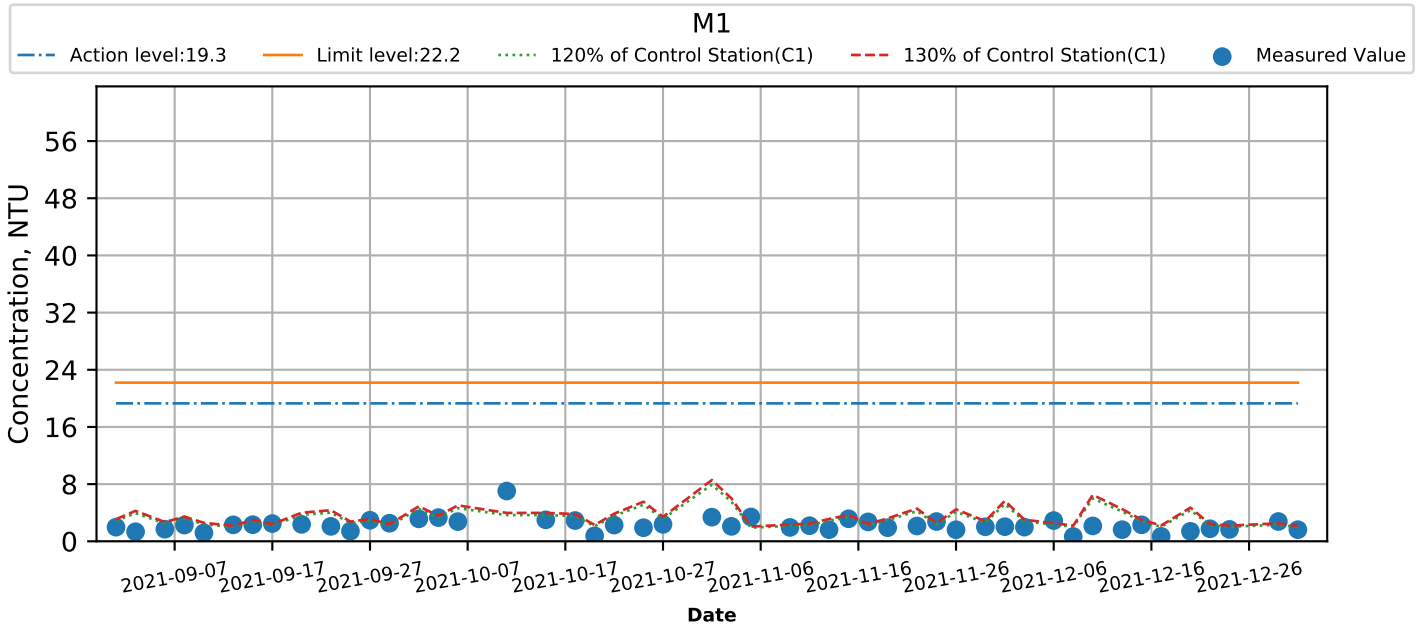
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Flood



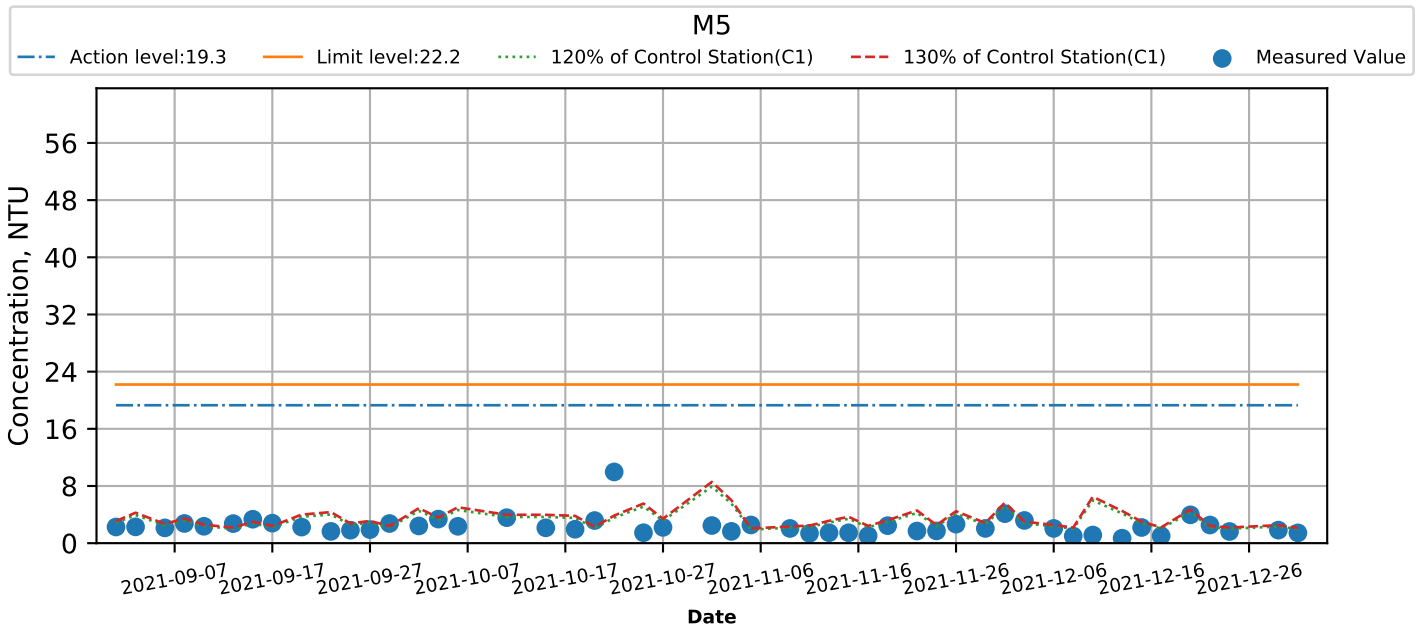
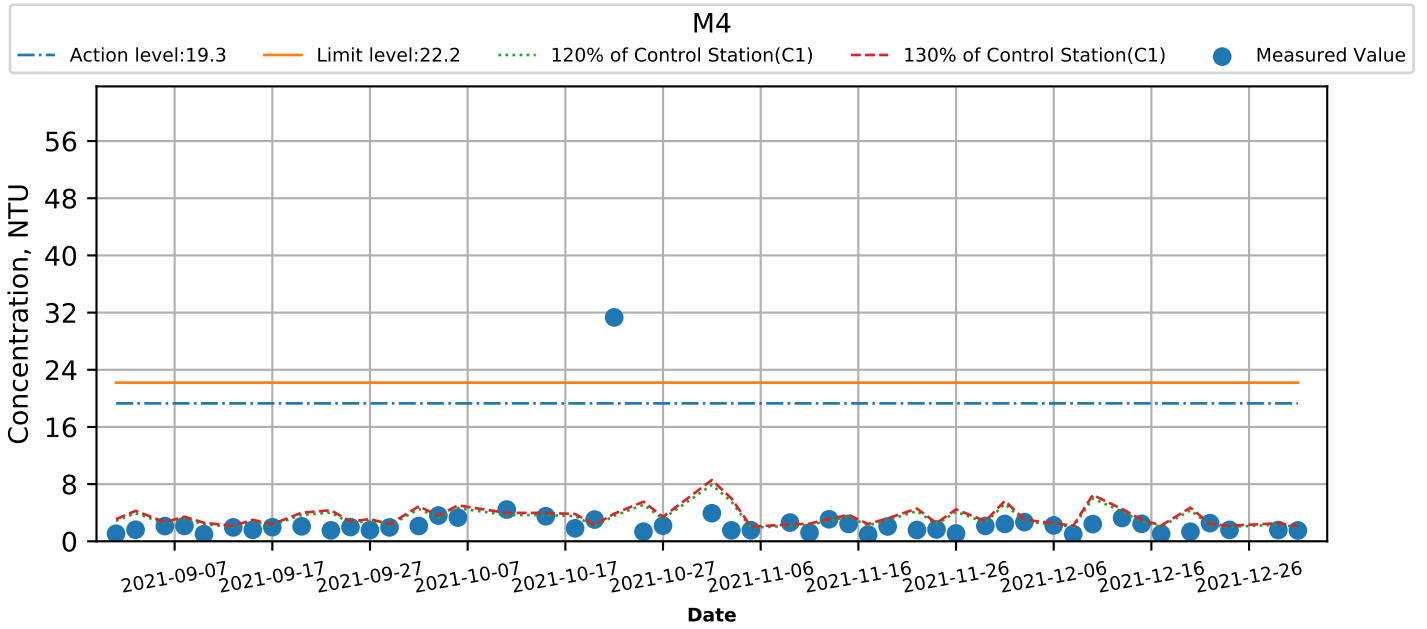
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Flood



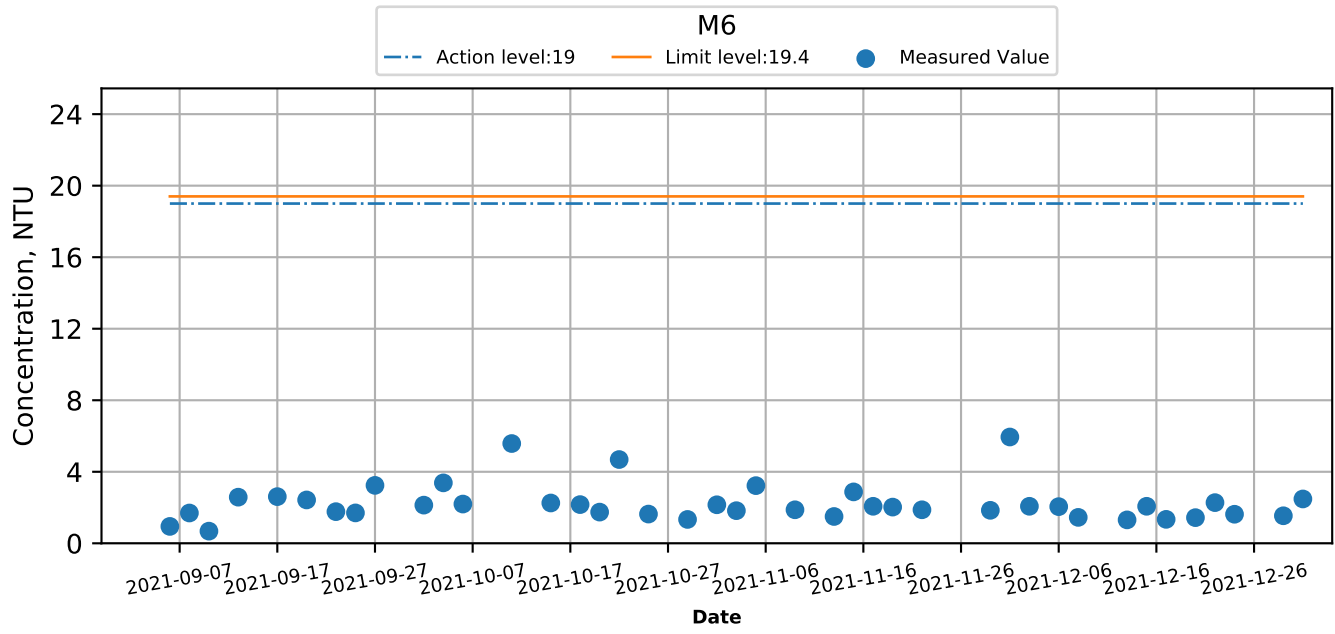
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Bottom) at Monitoring Stations during Mid-Flood



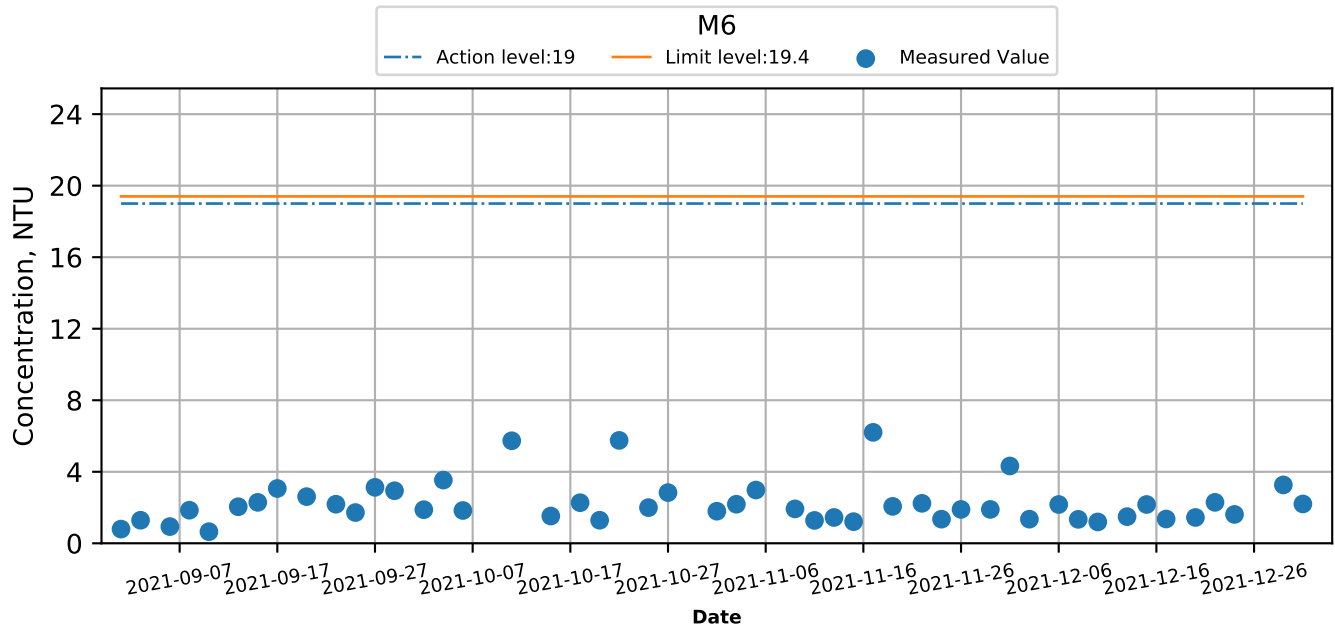
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Intake level) at Monitoring Stations during Mid-Ebb



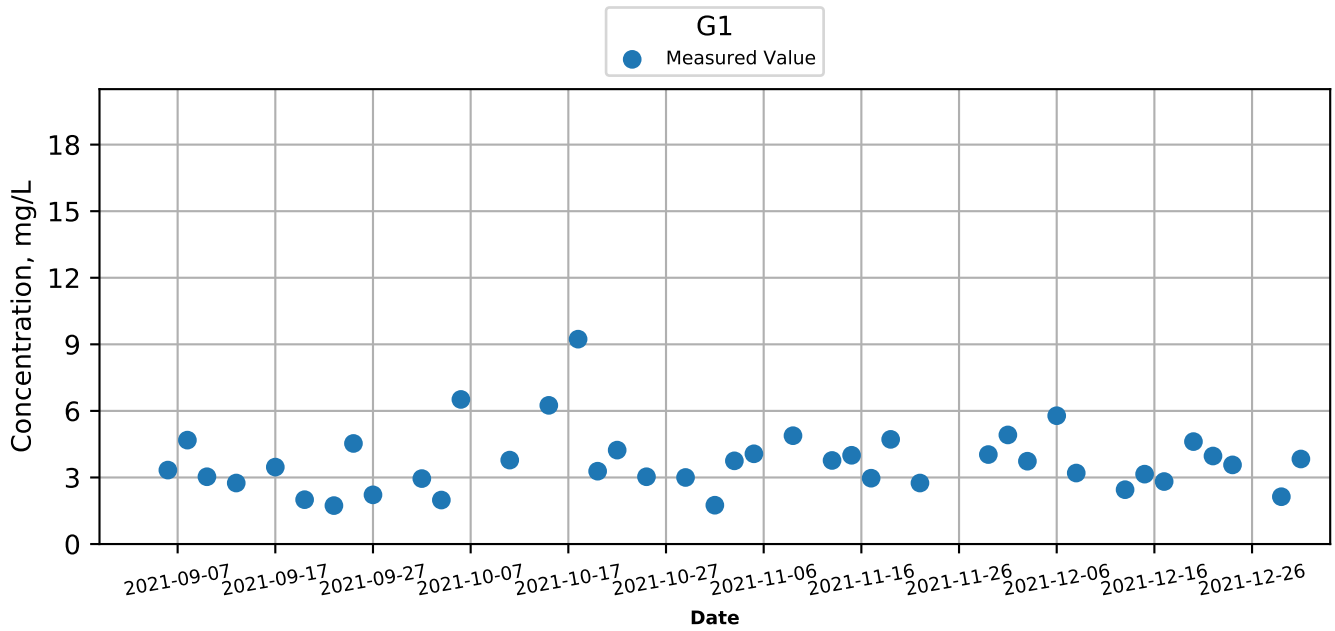
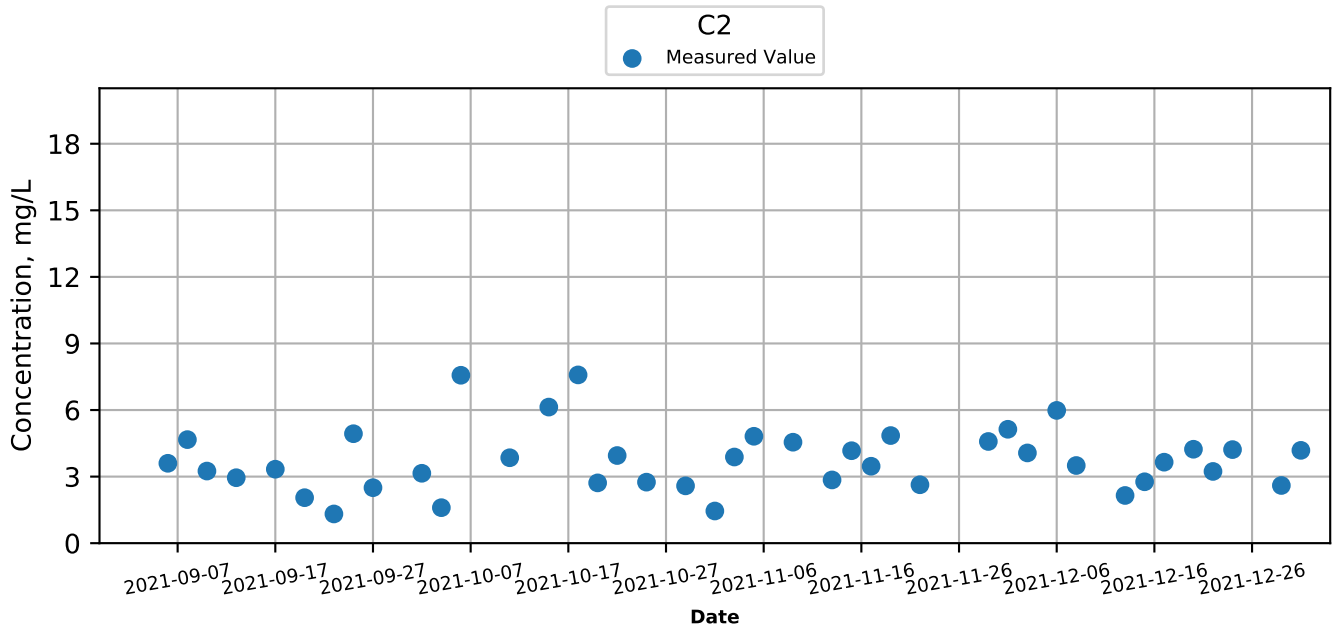
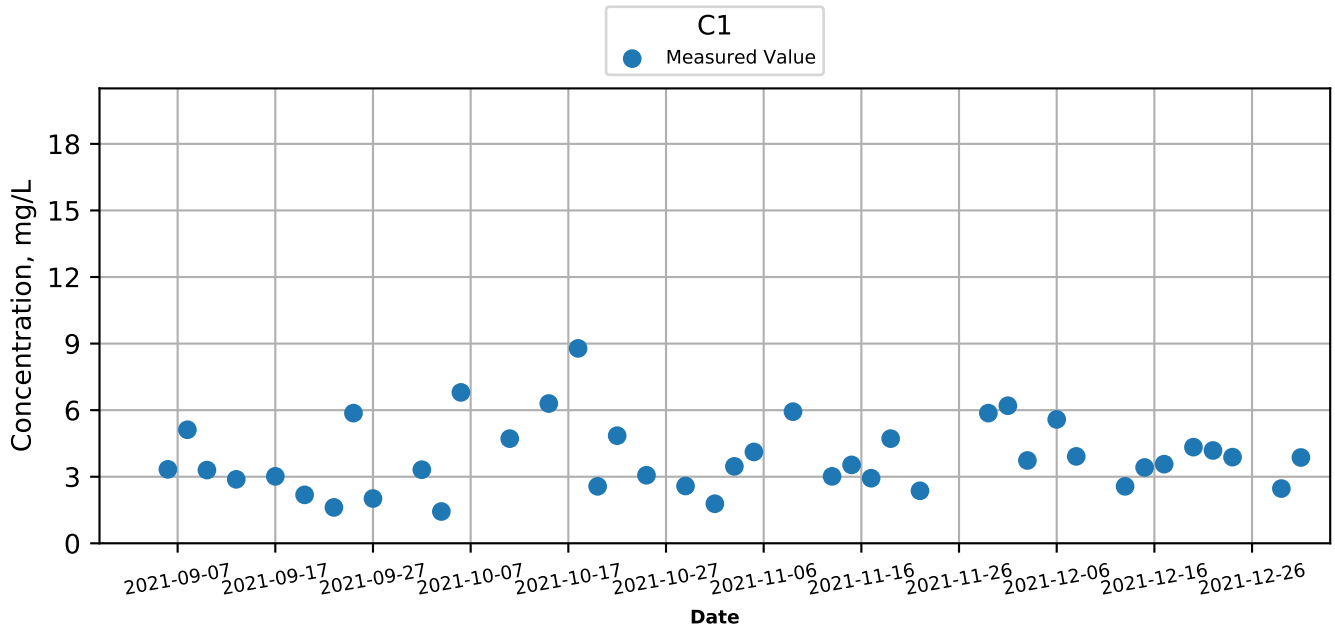
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Turbidity (Intake level) at Monitoring Stations during Mid-Flood



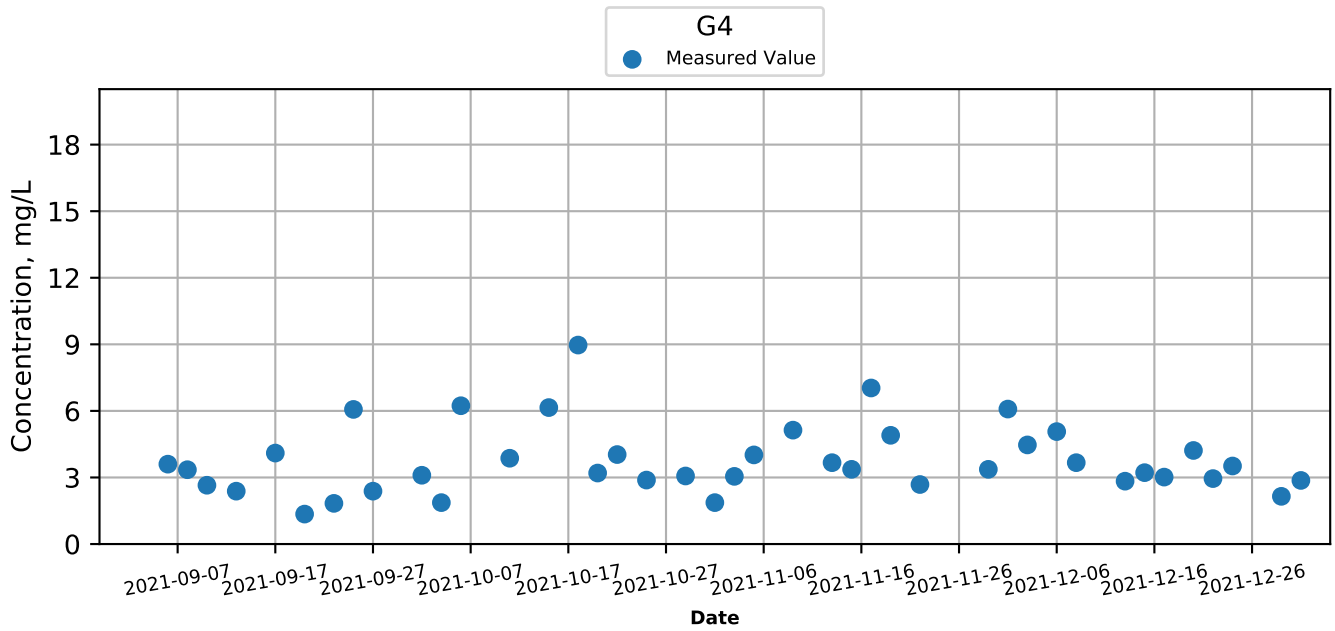
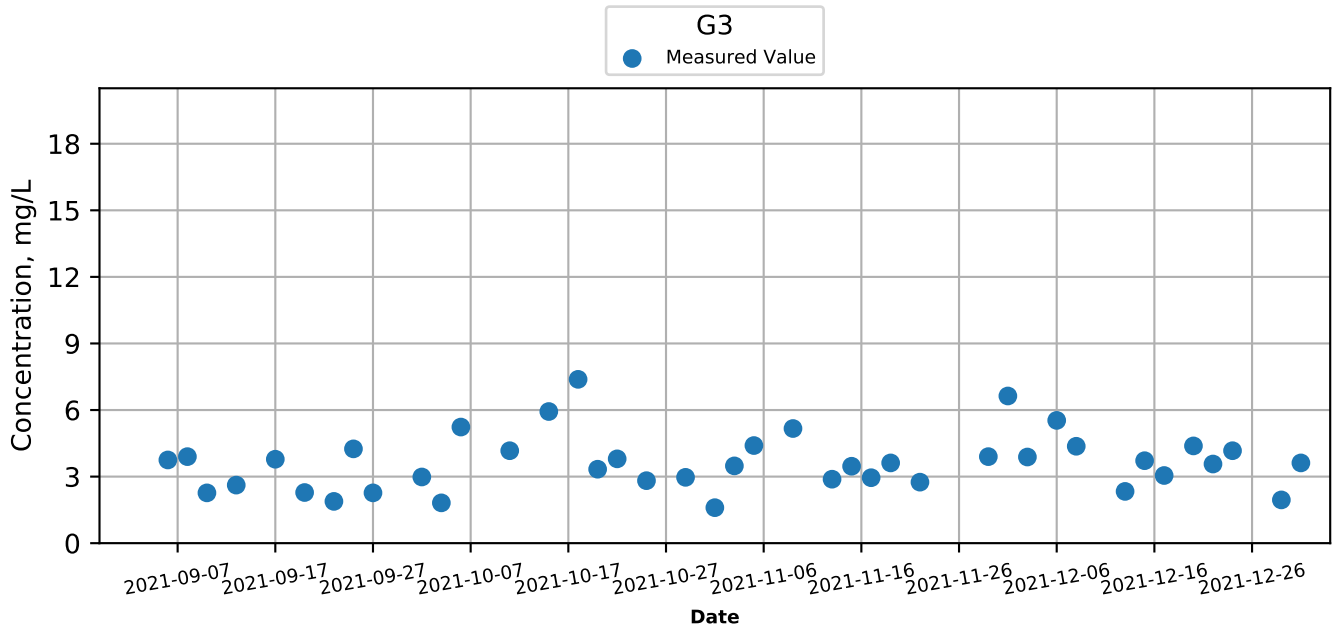
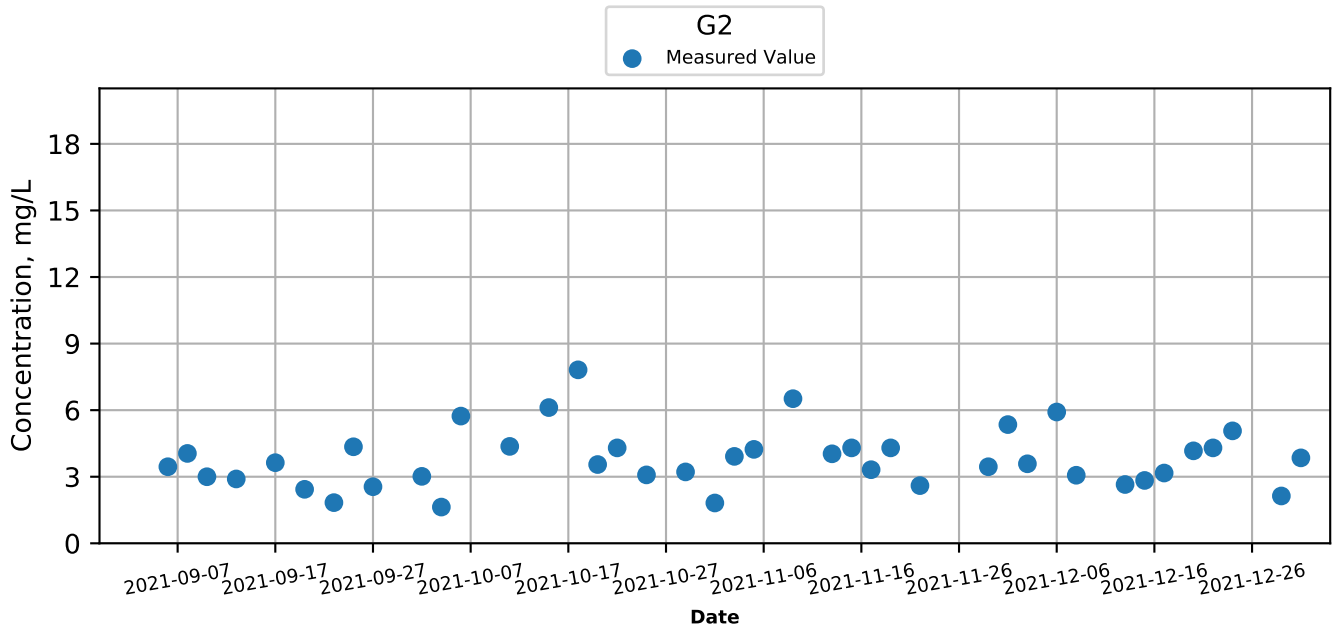
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Ebb



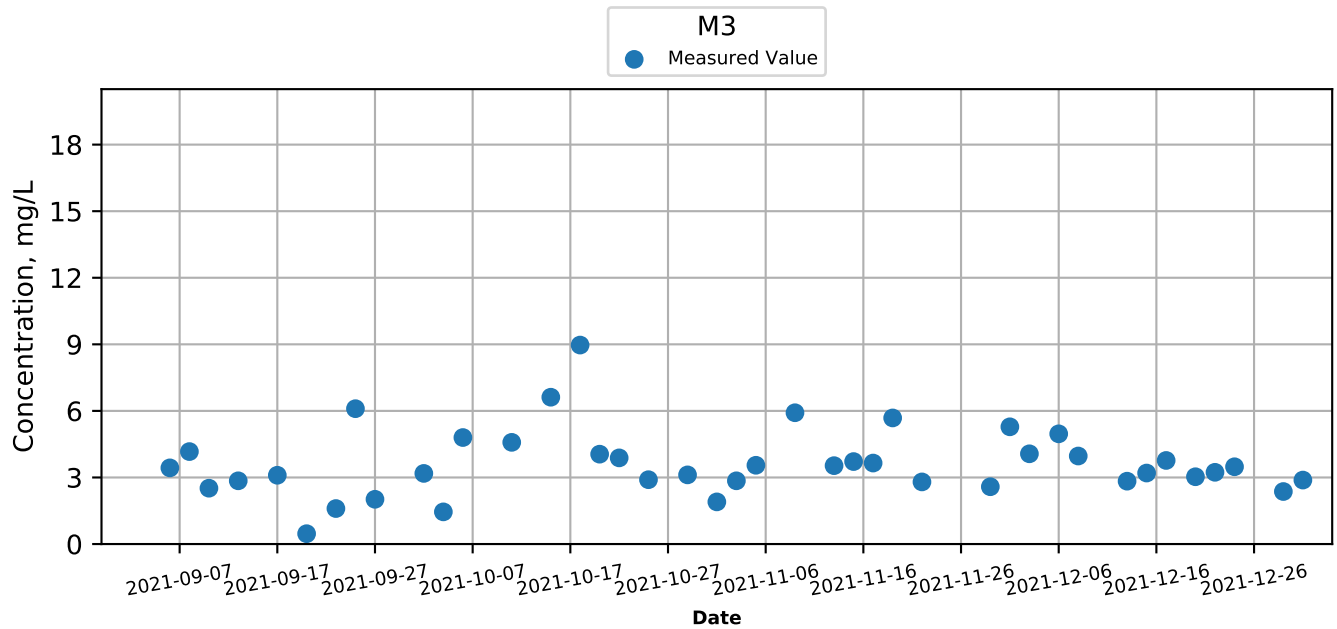
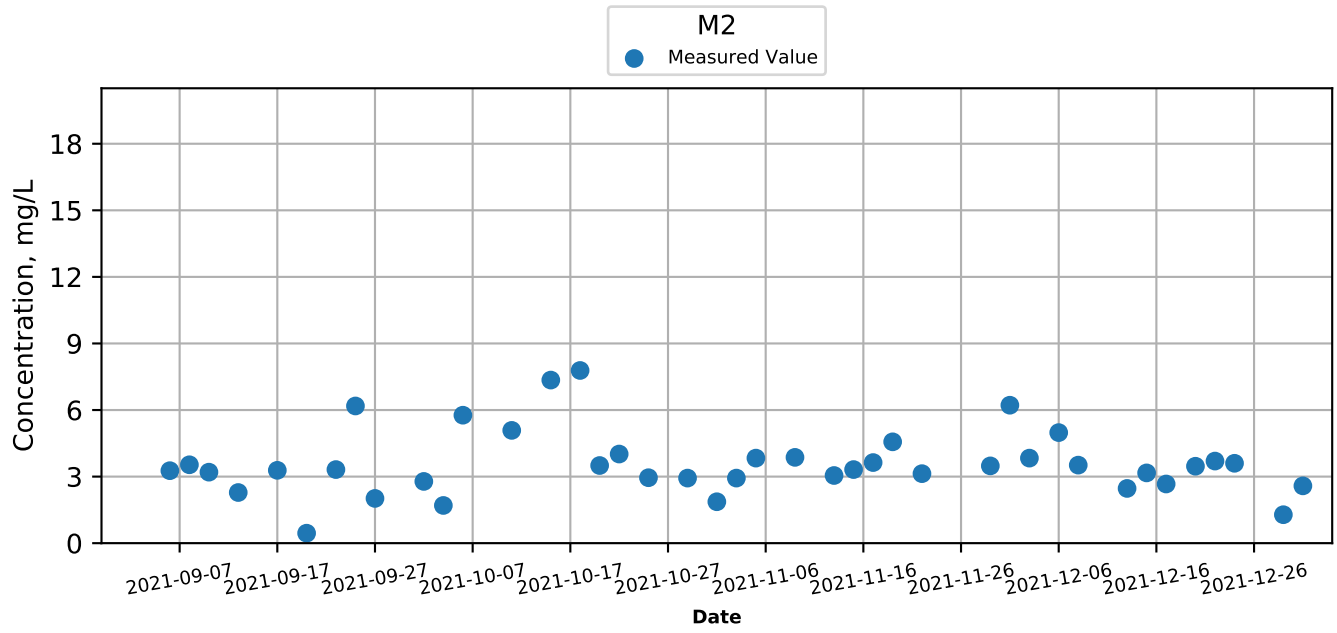
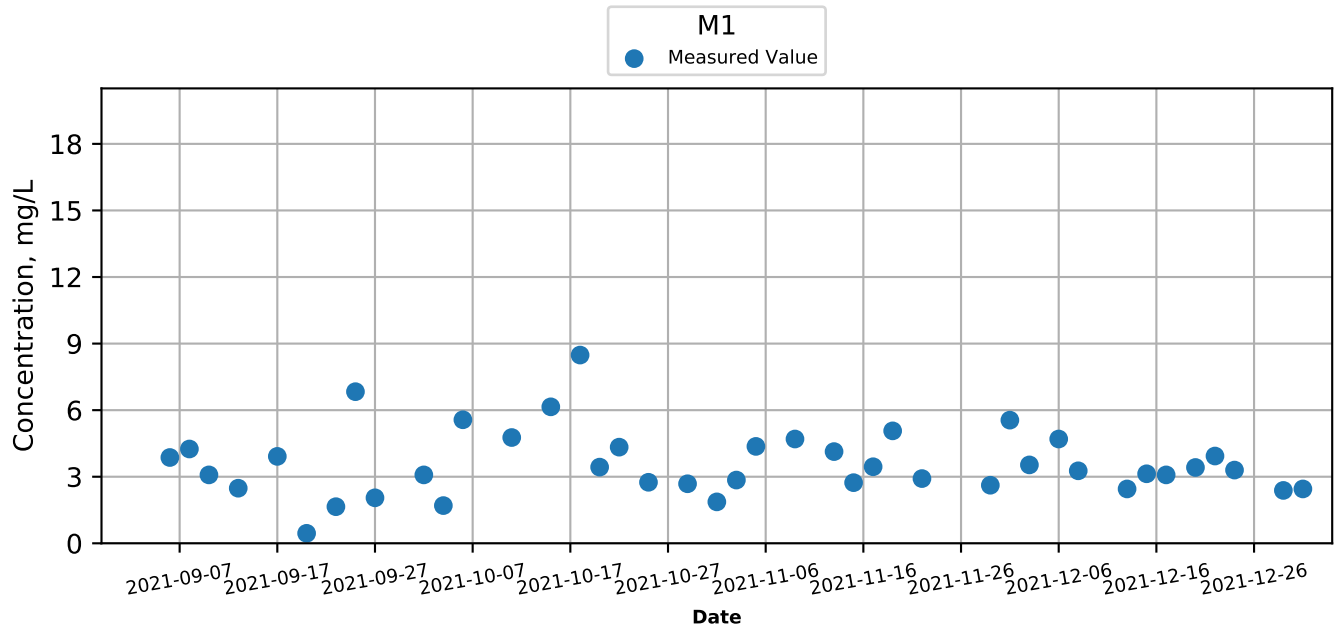
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Ebb



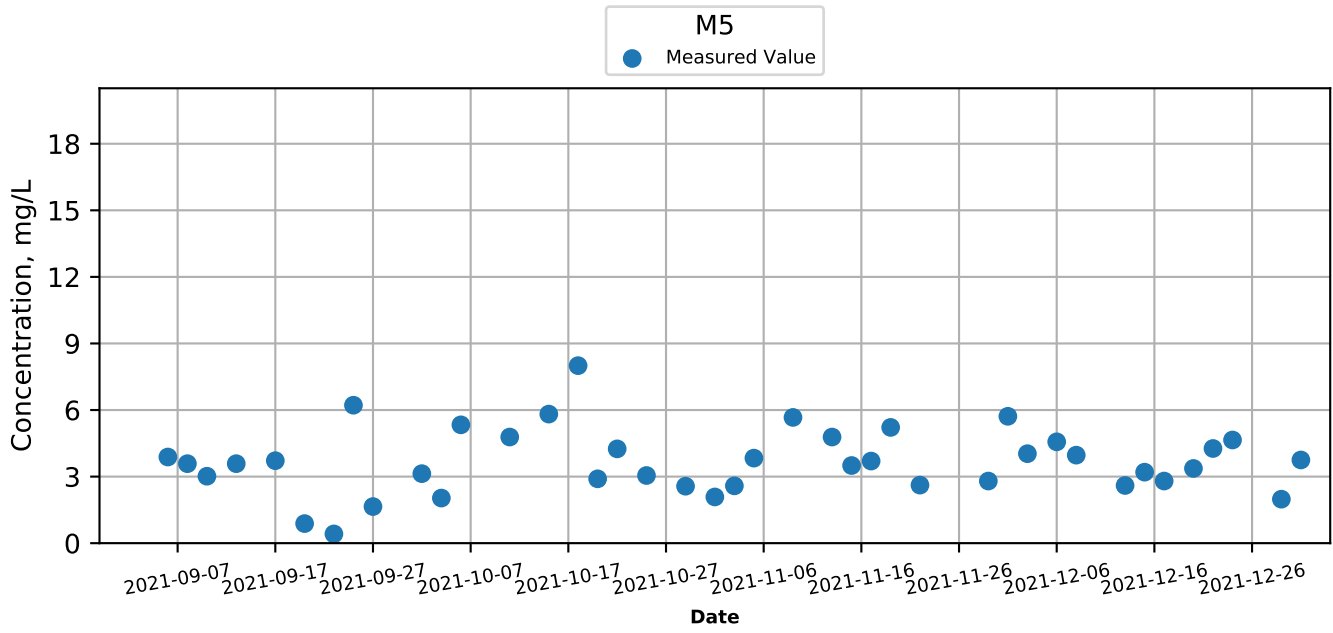
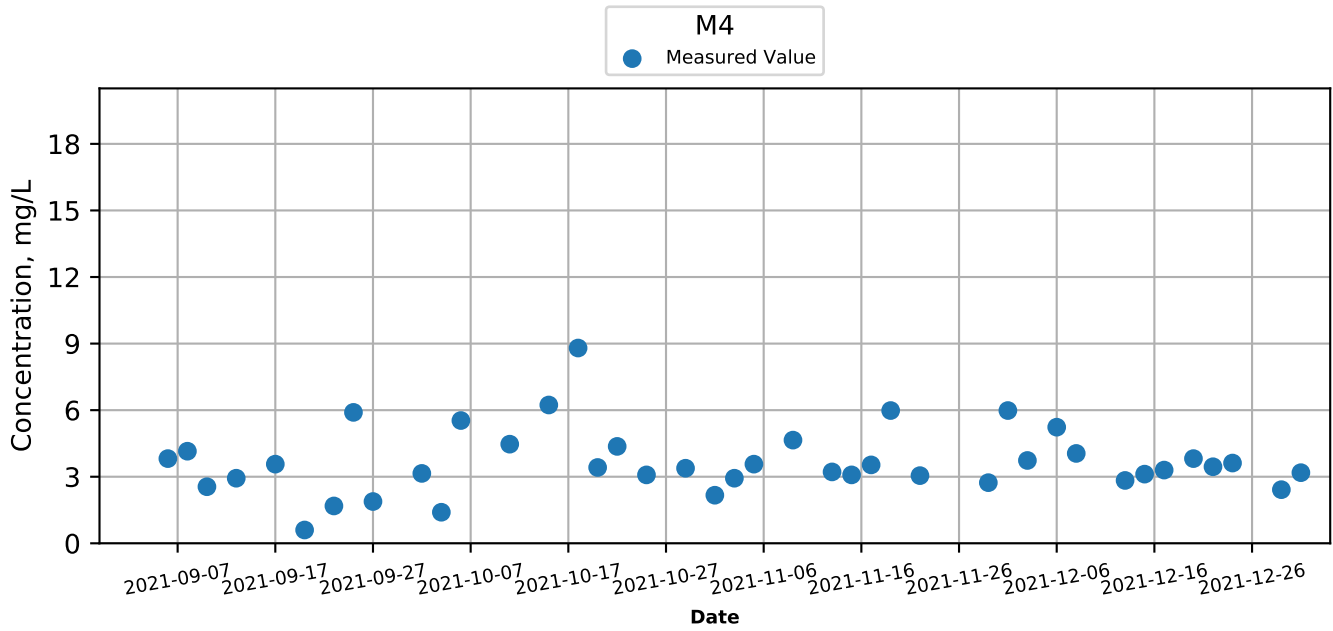
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Ebb



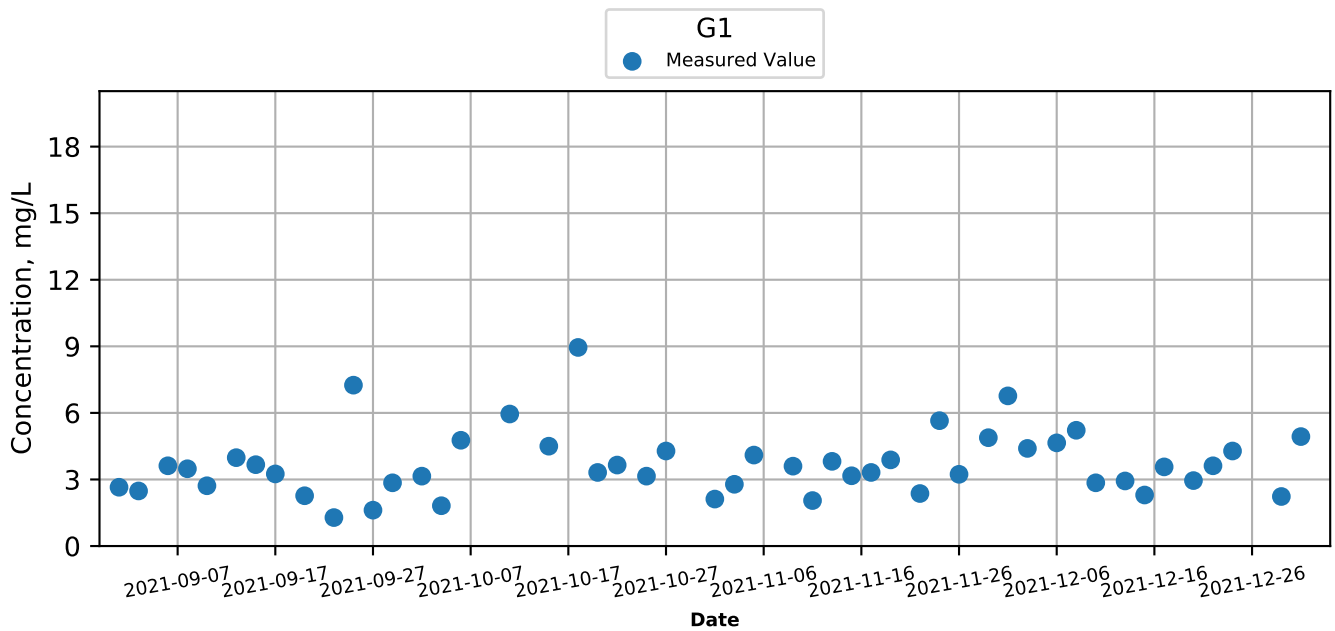
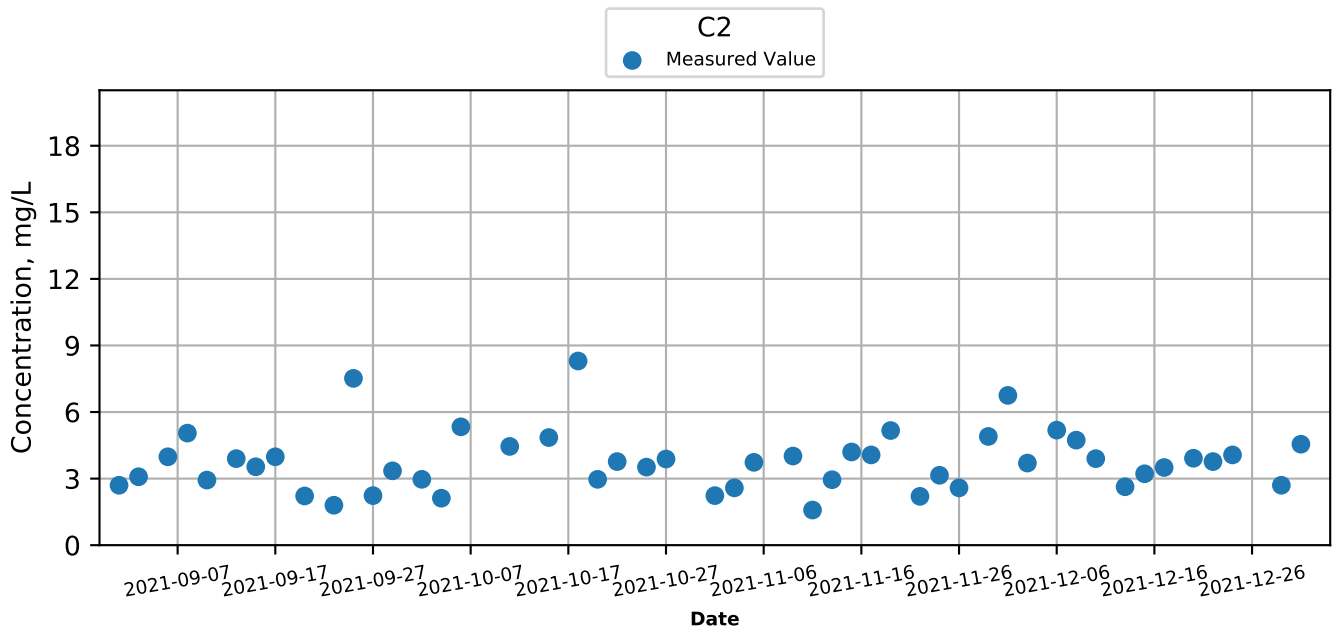
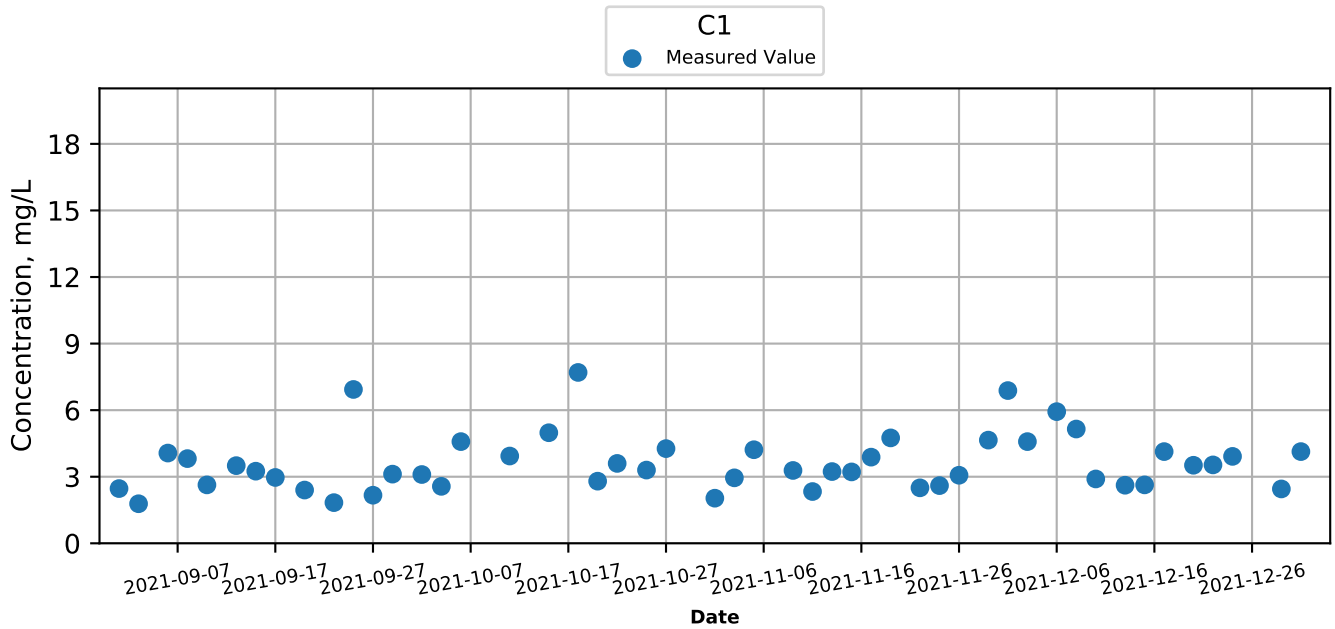
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Ebb



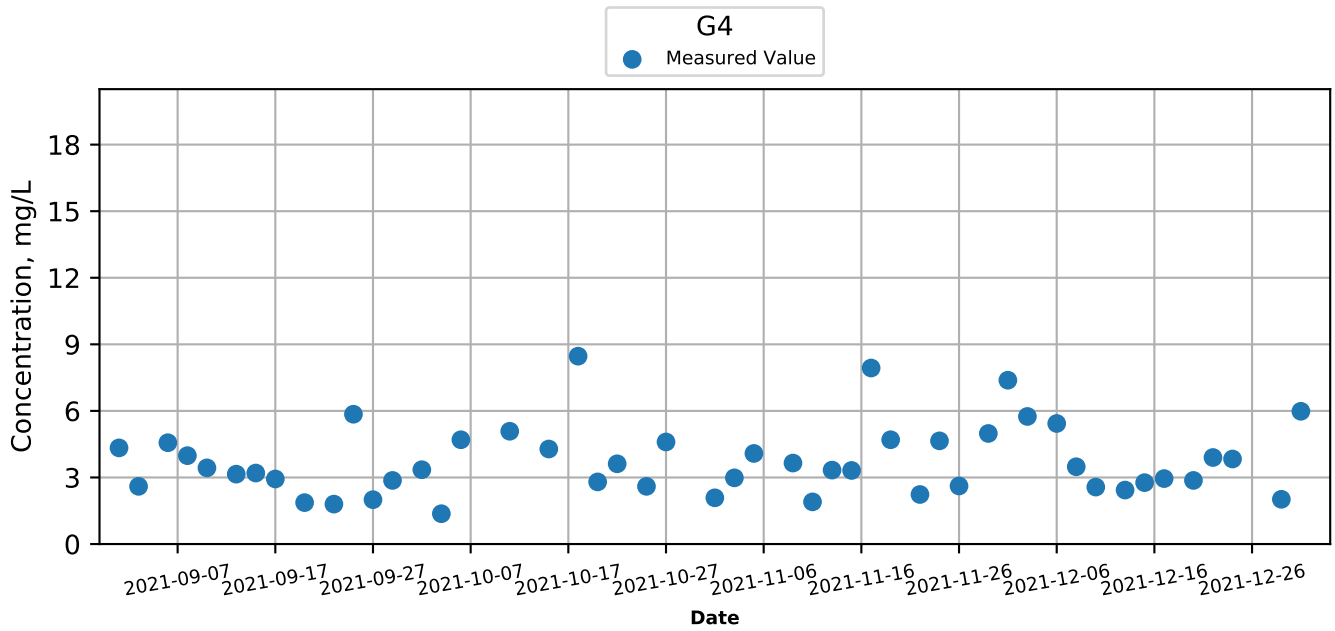
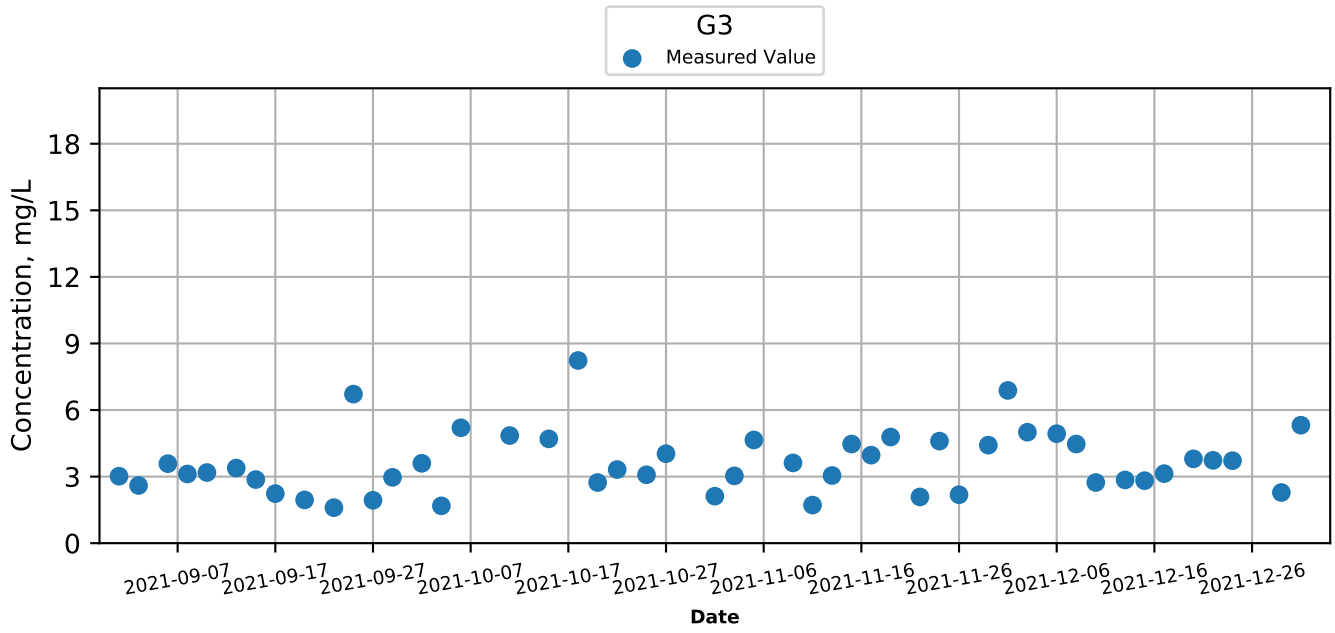
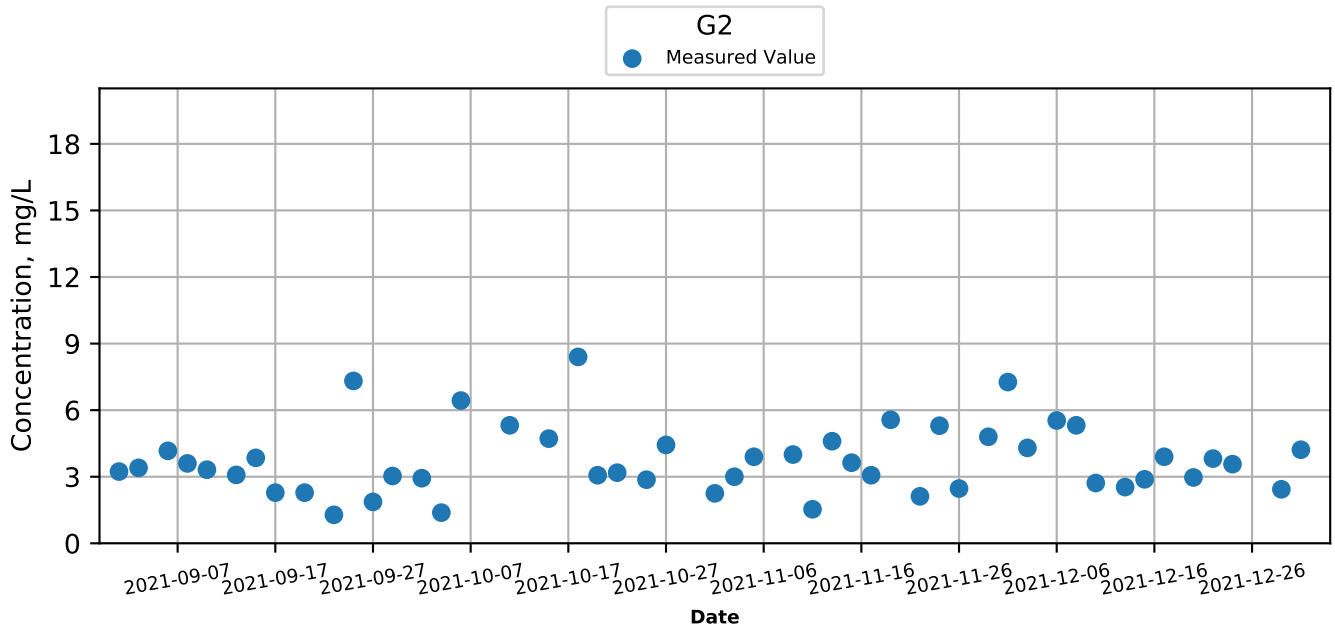
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Flood



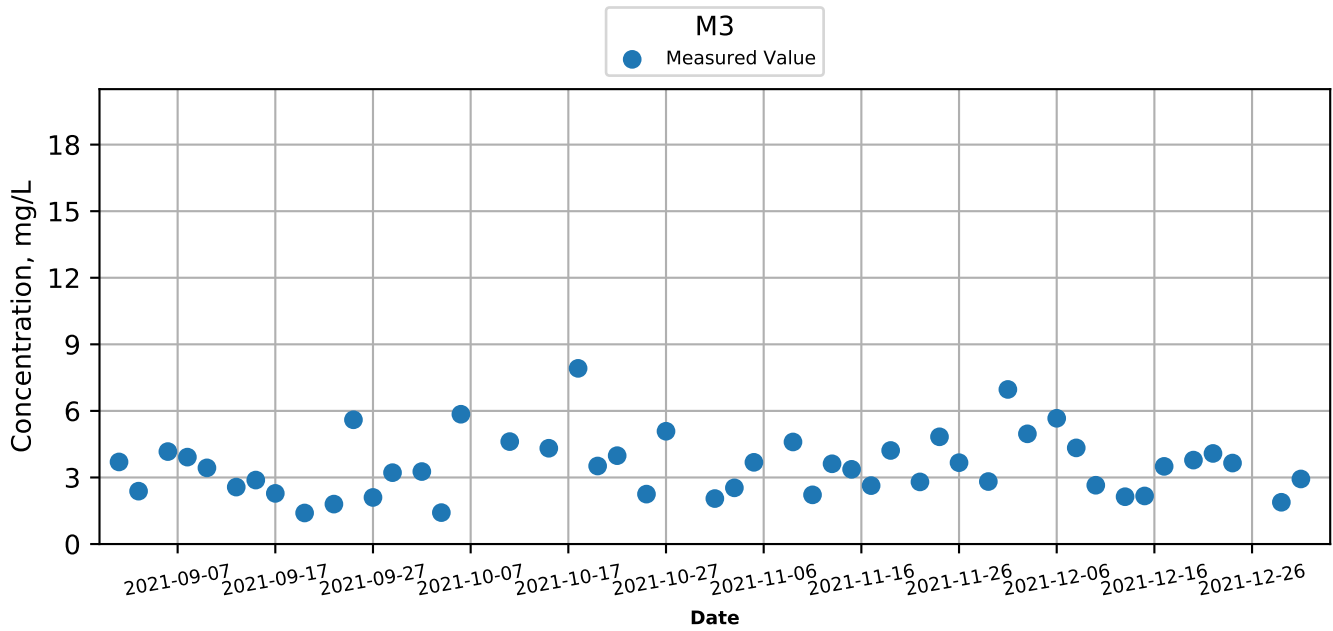
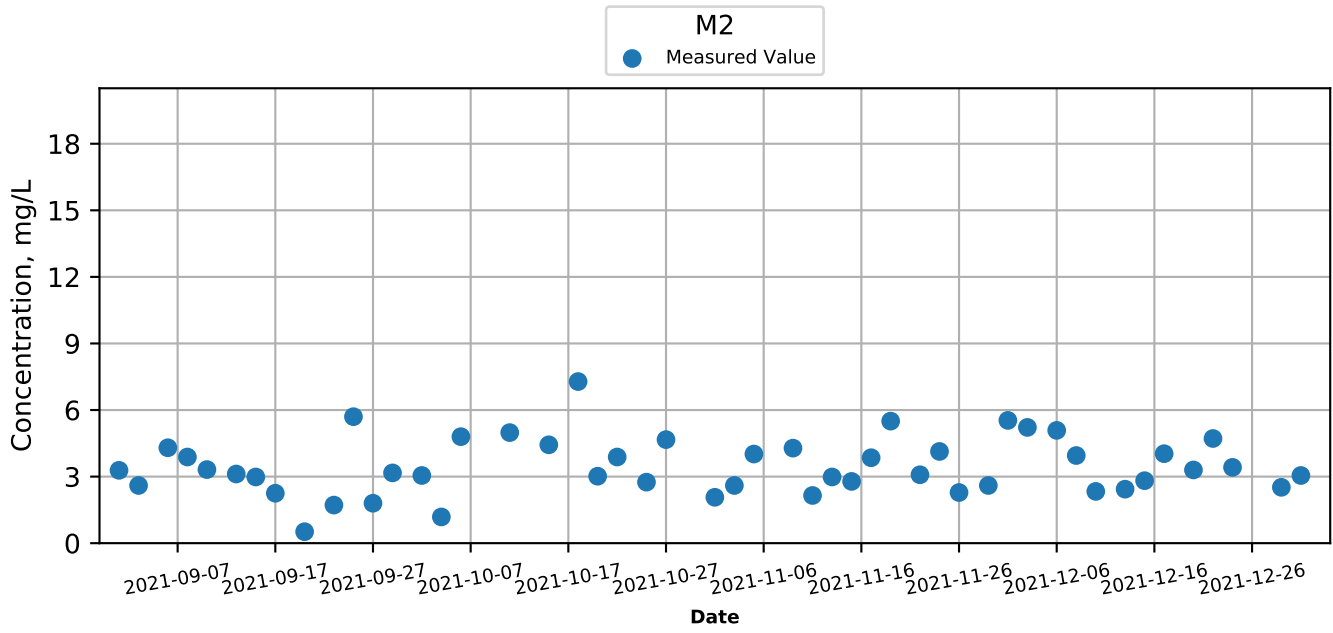
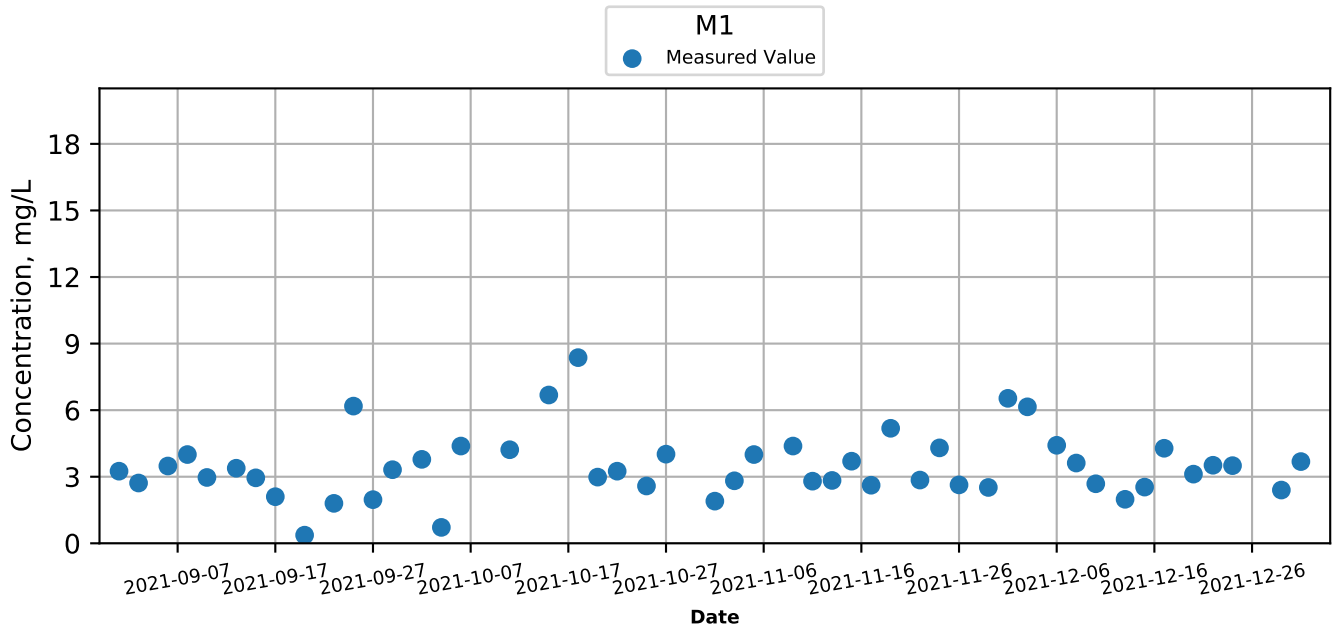
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Flood



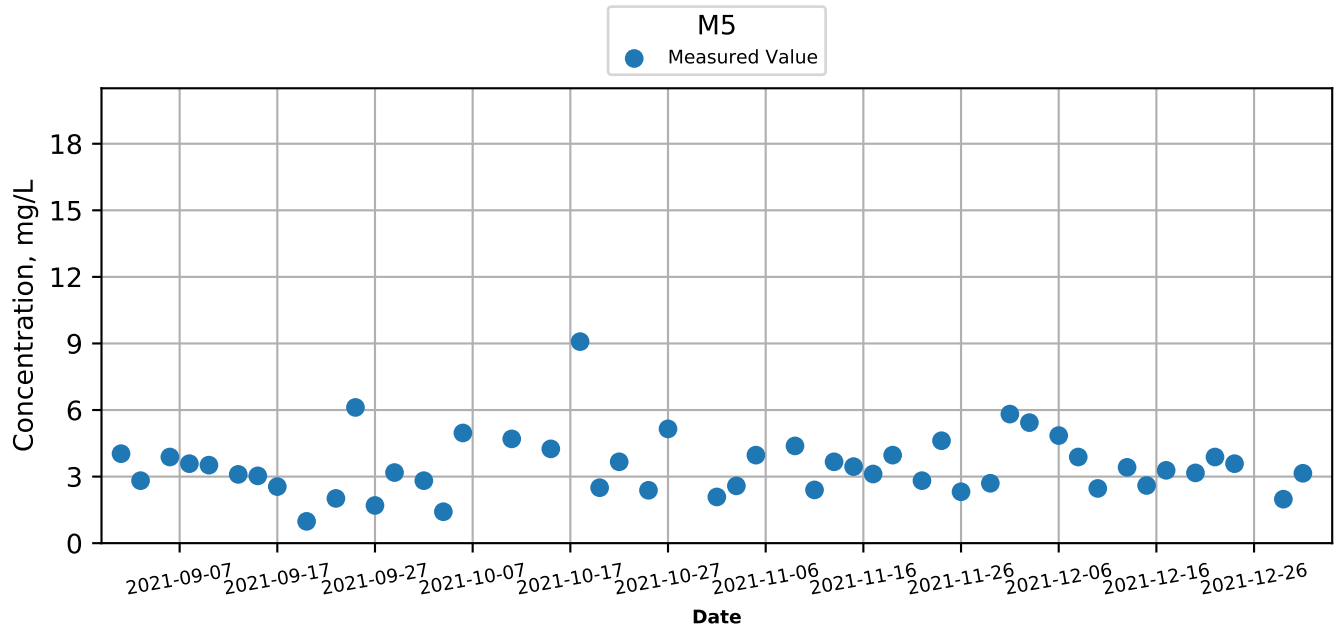
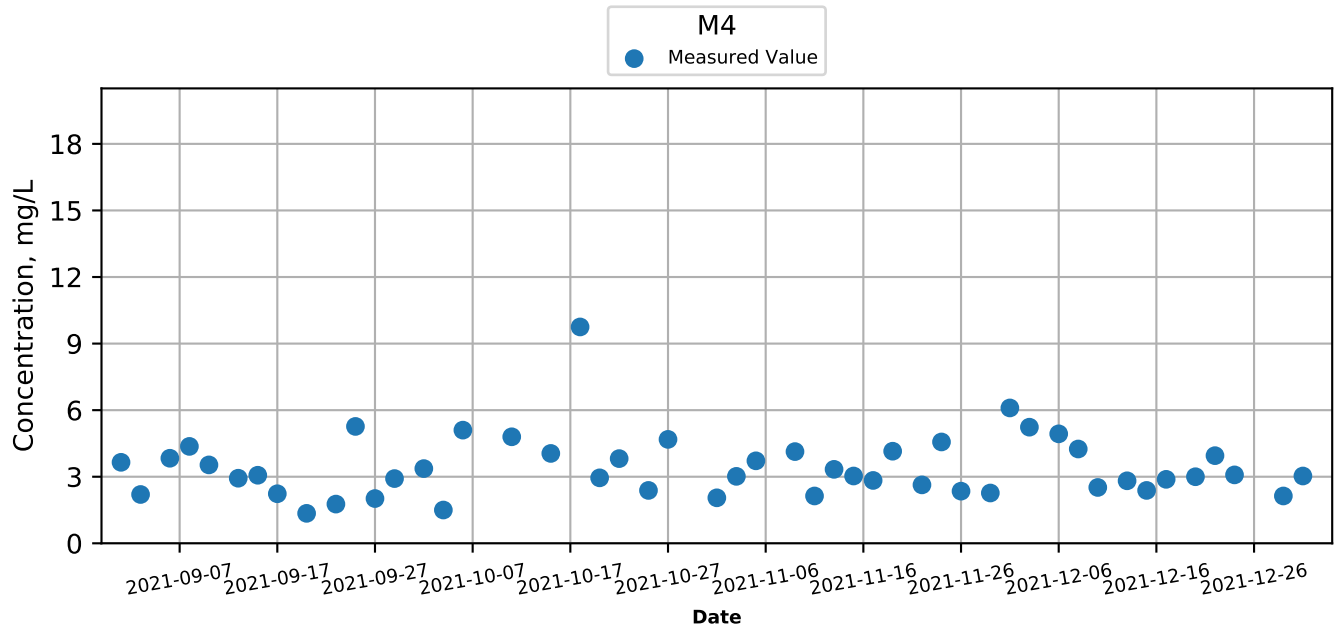
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Flood



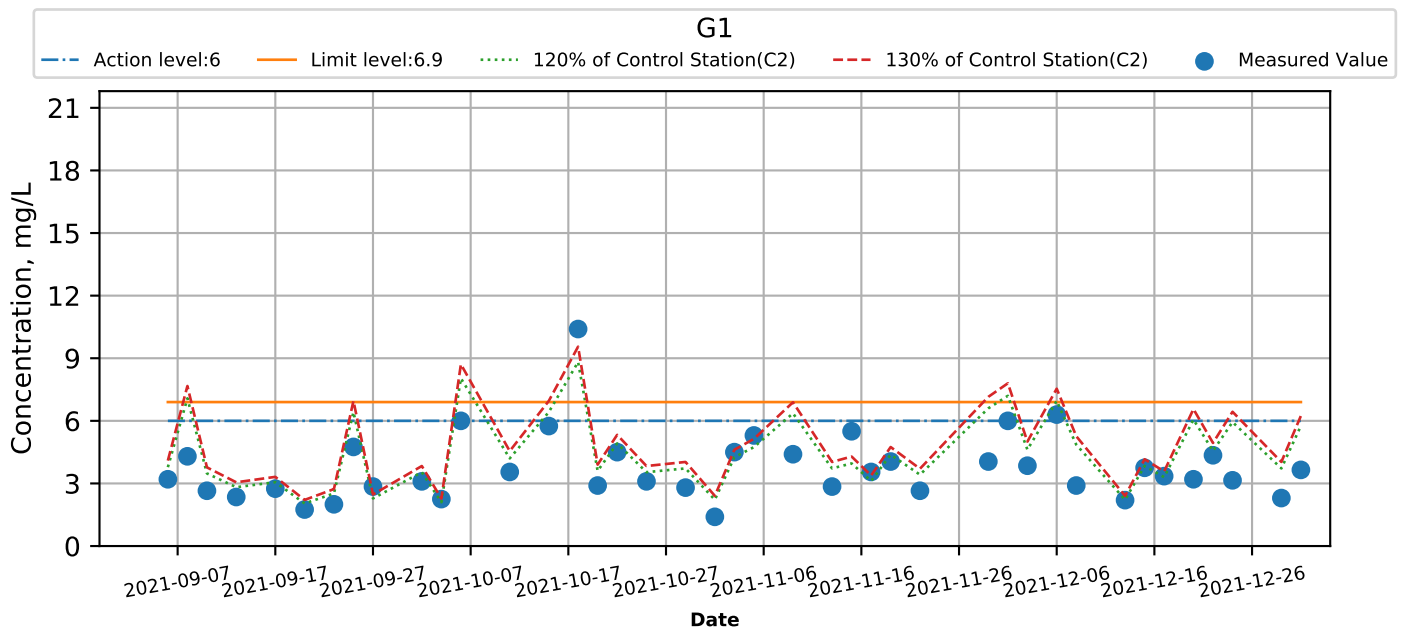
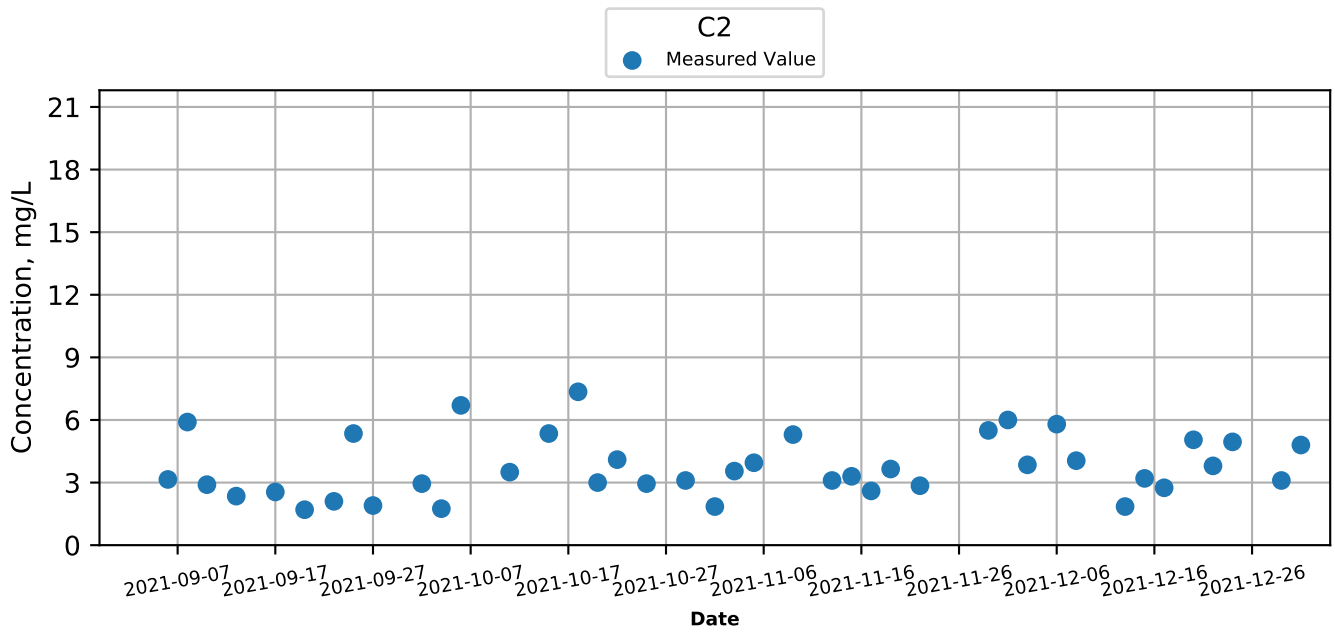
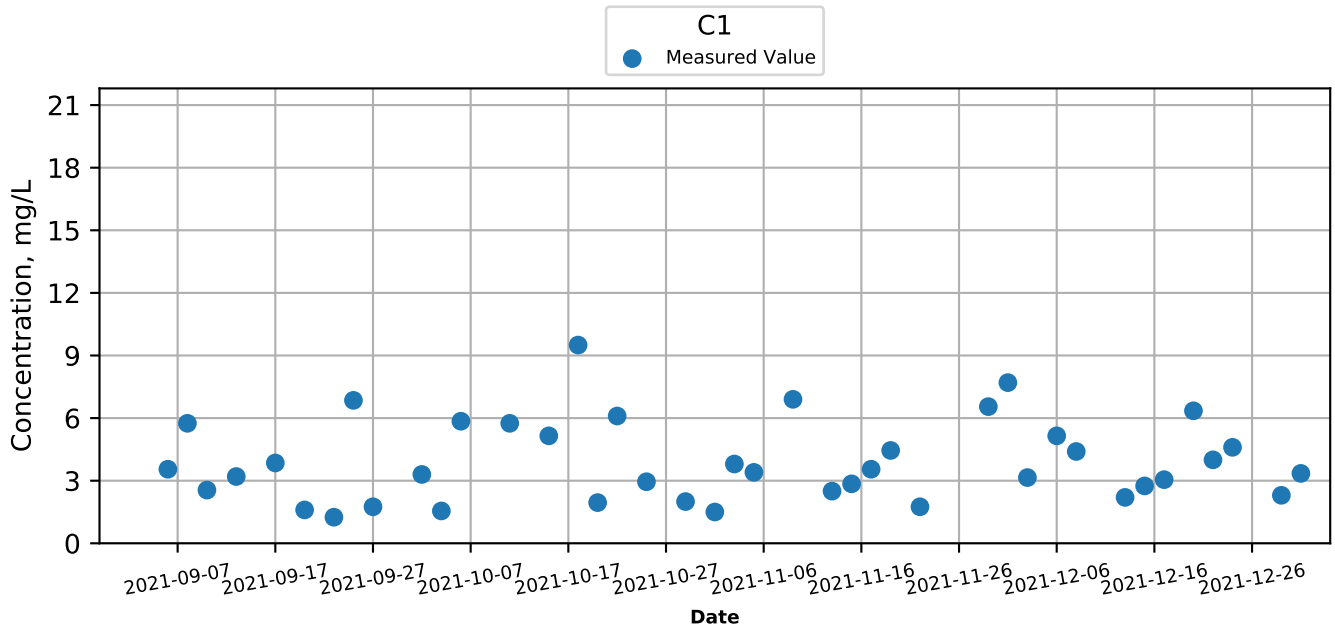
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Depth-Averaged) at Monitoring Stations during Mid-Flood



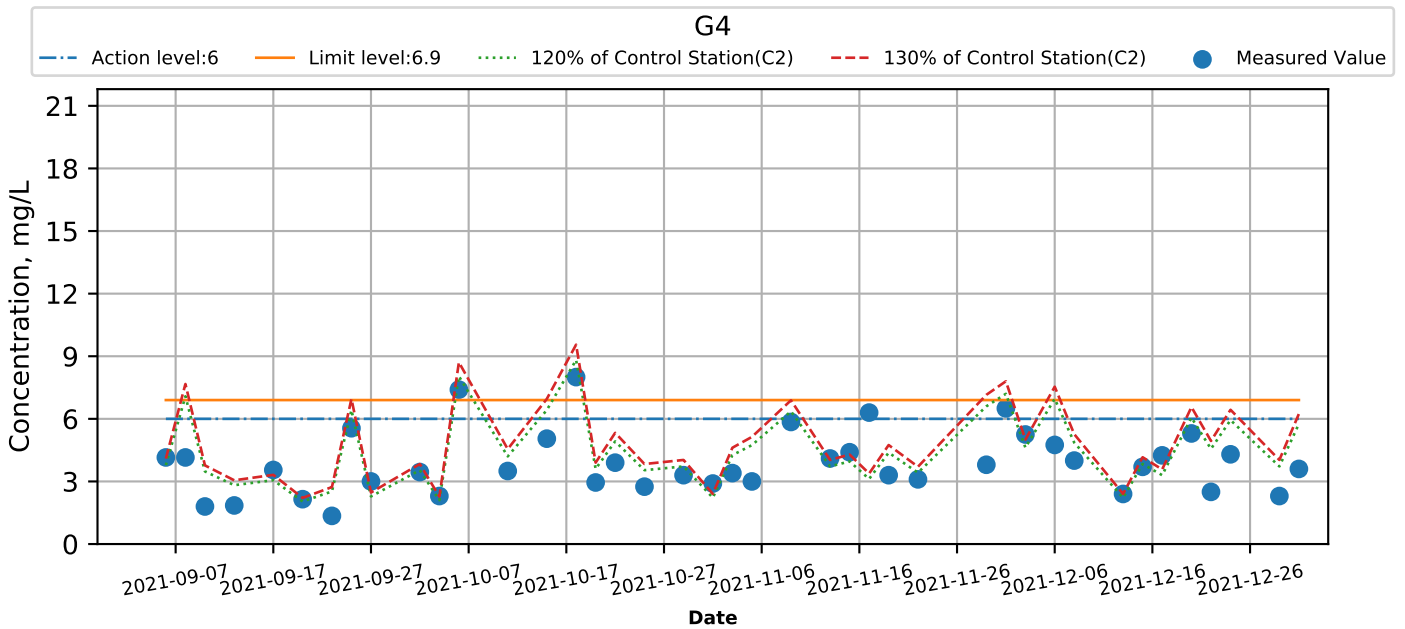
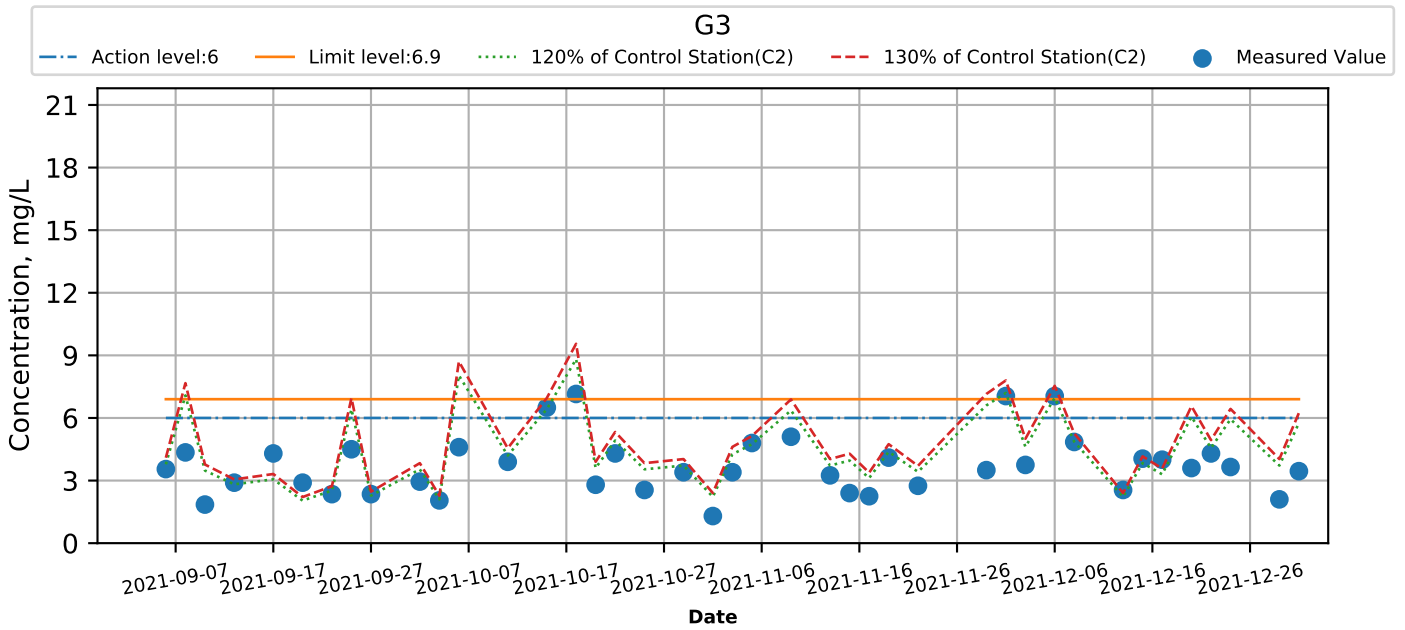
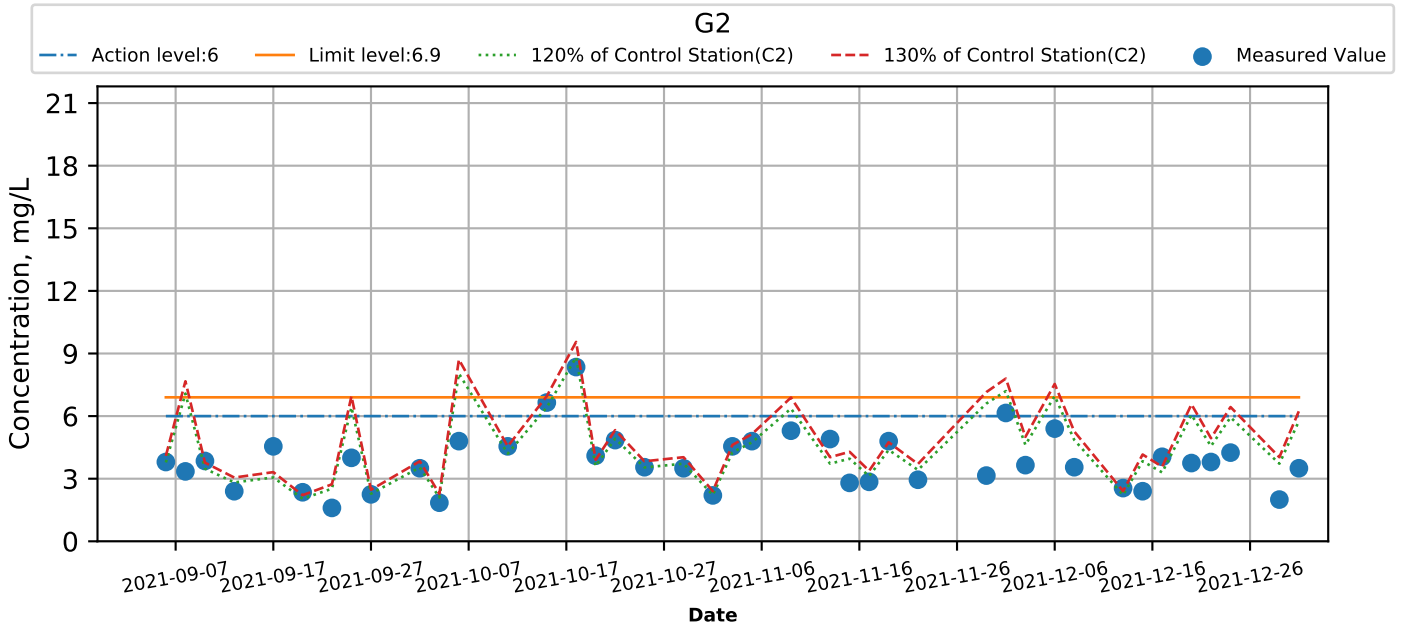
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Ebb



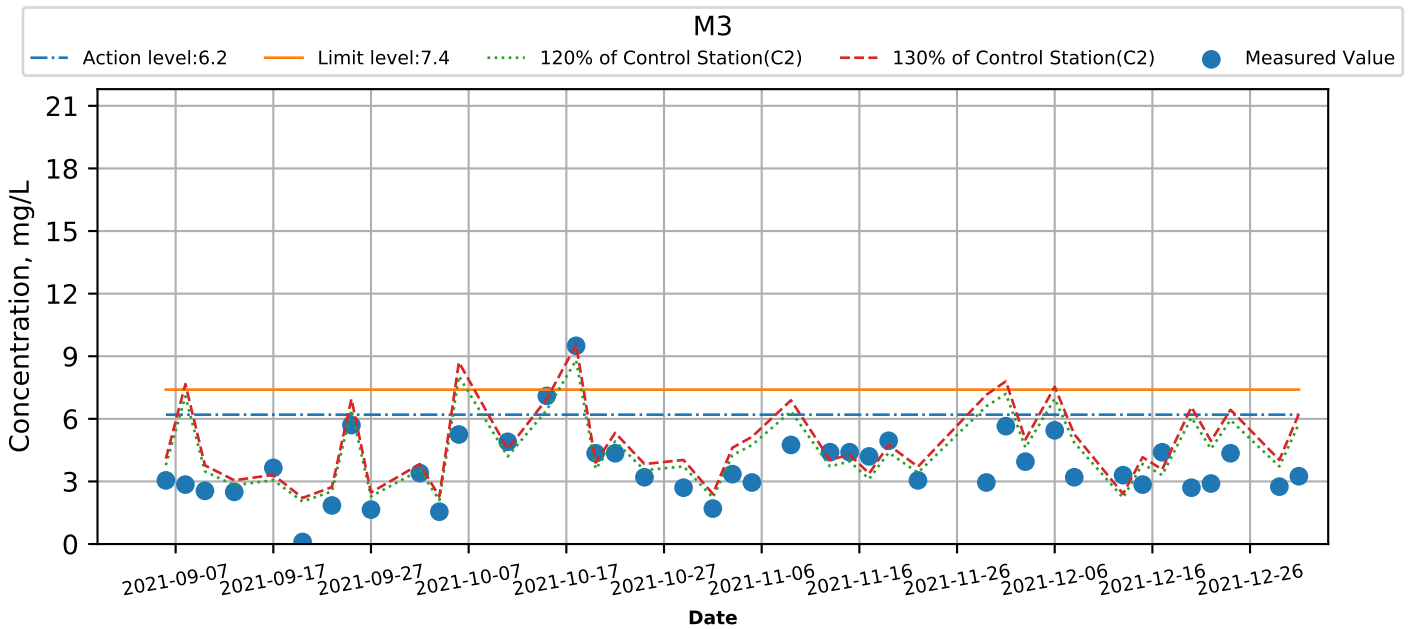
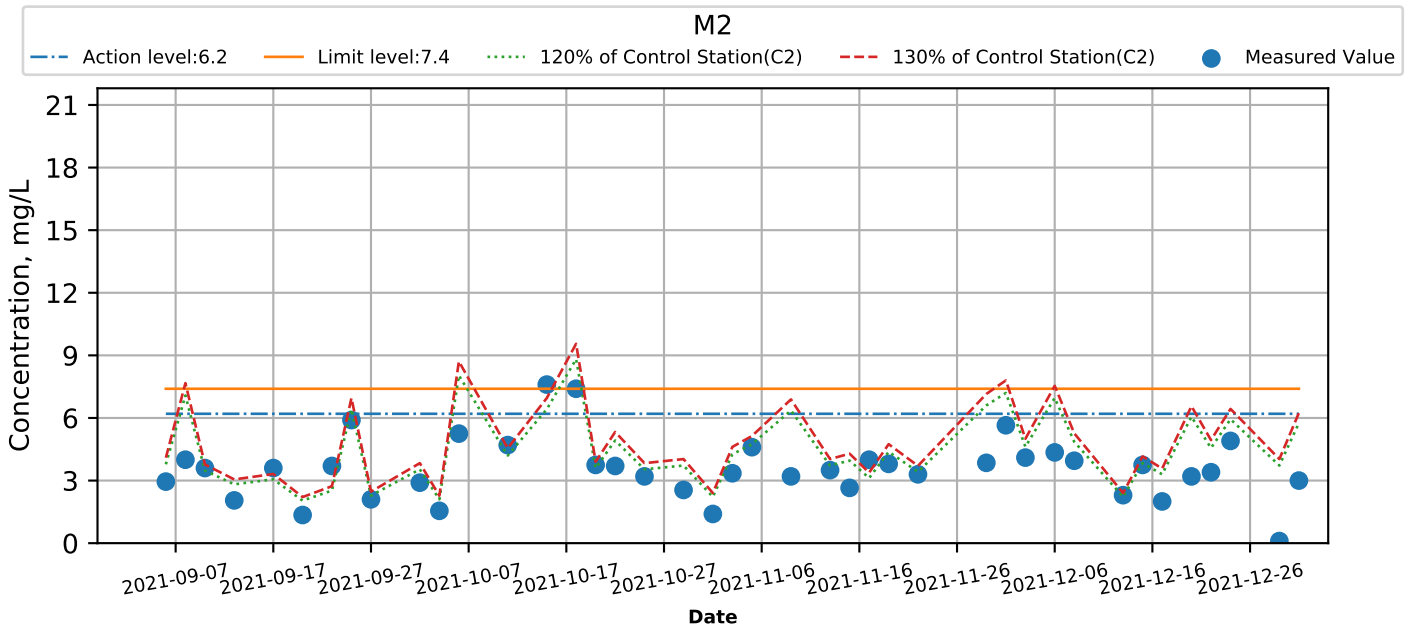
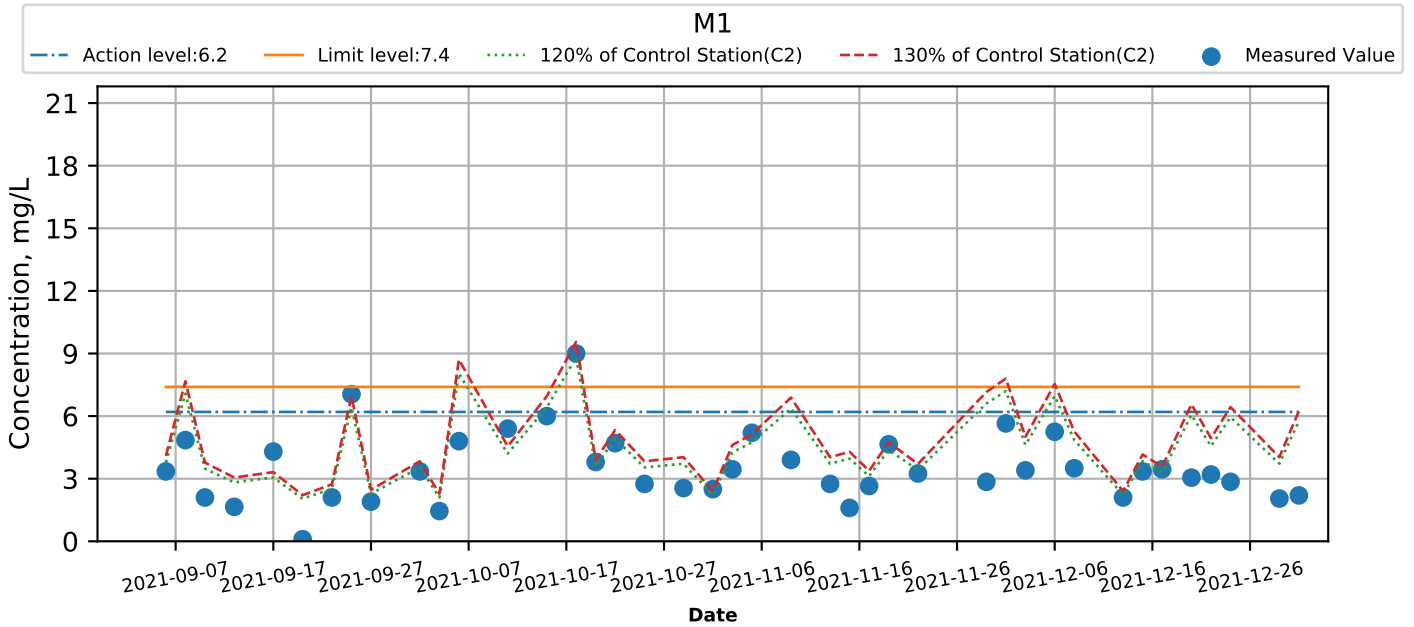
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Ebb



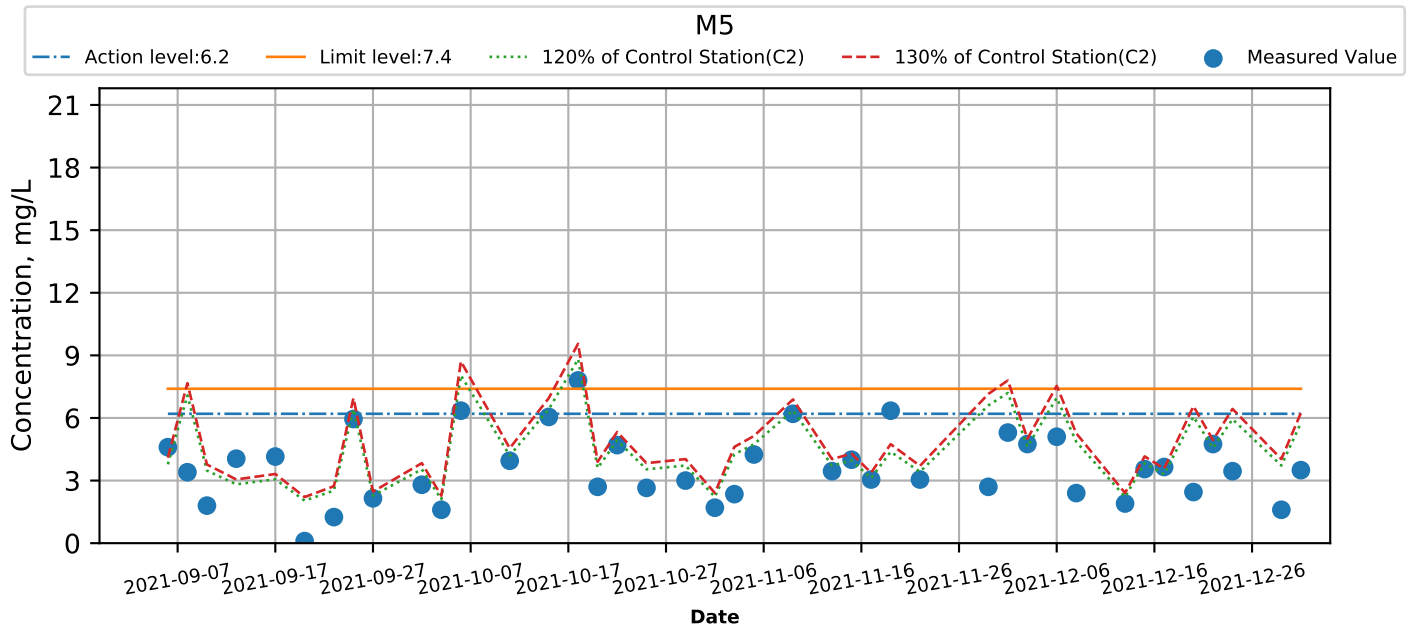
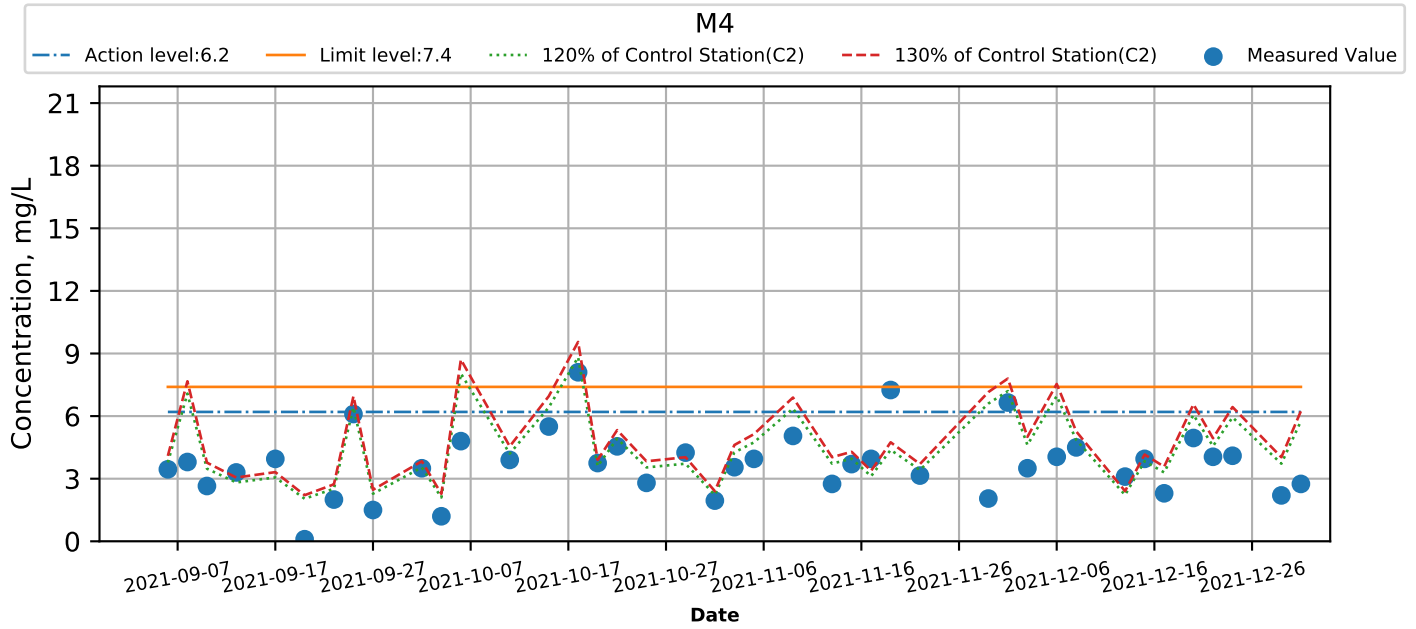
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Ebb



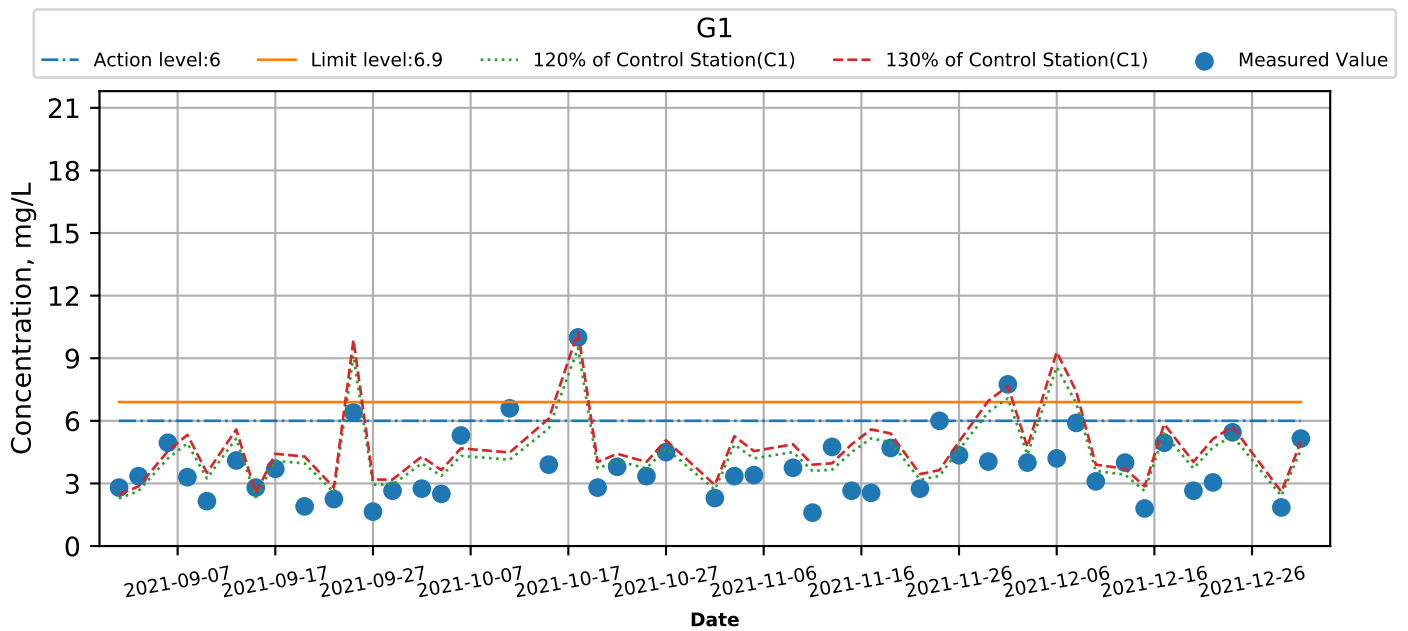
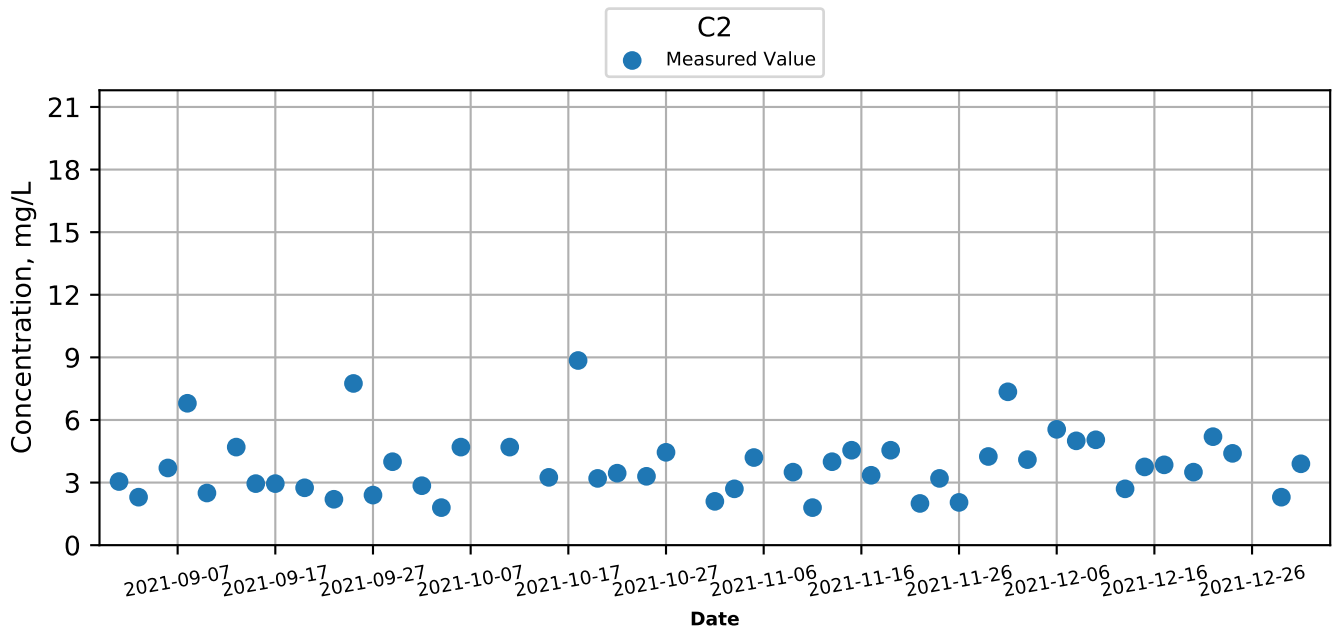
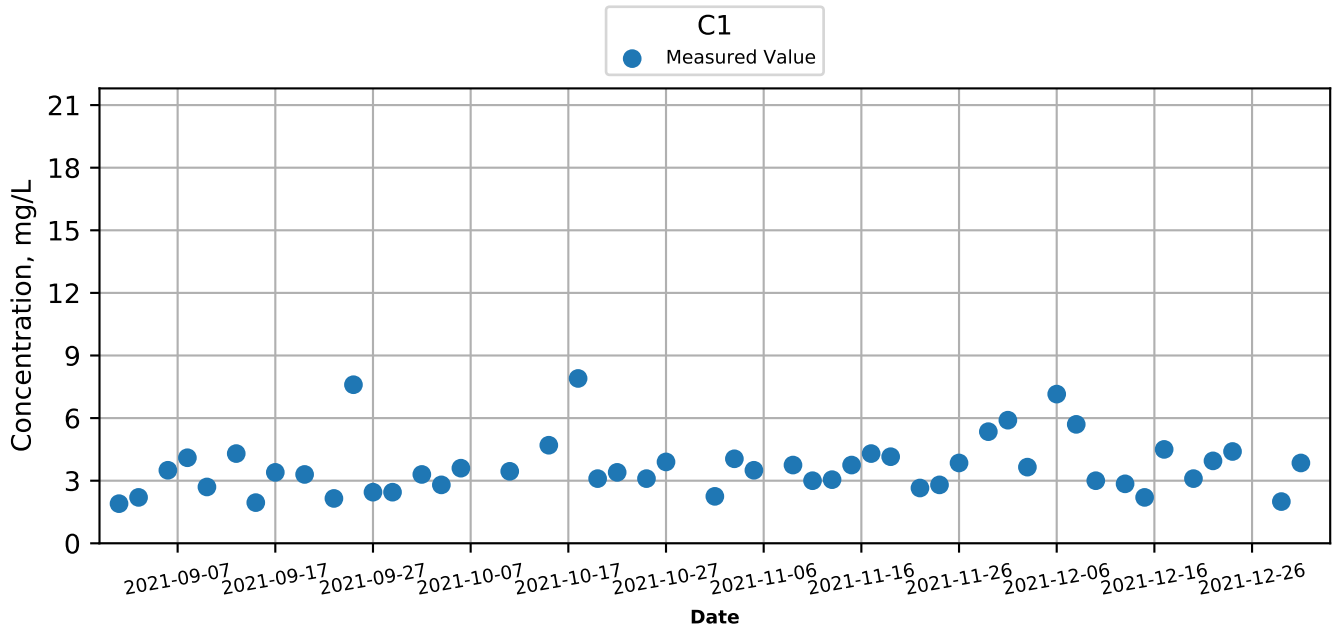
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Ebb



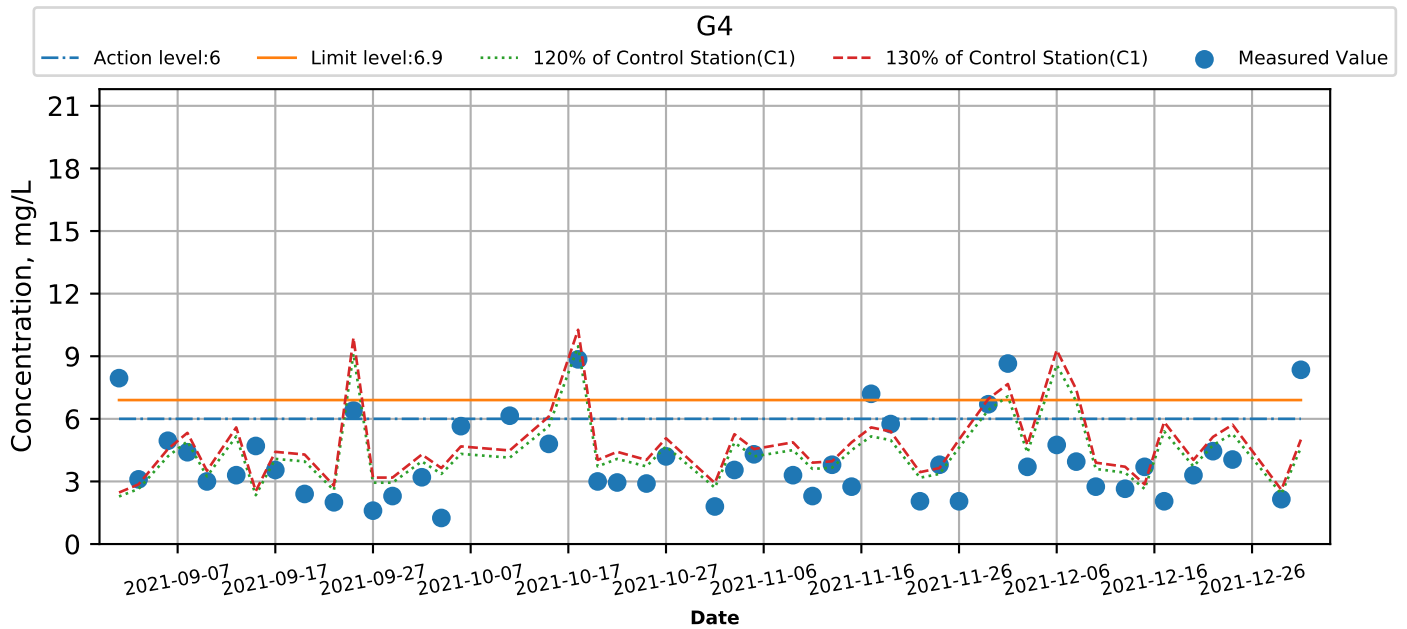
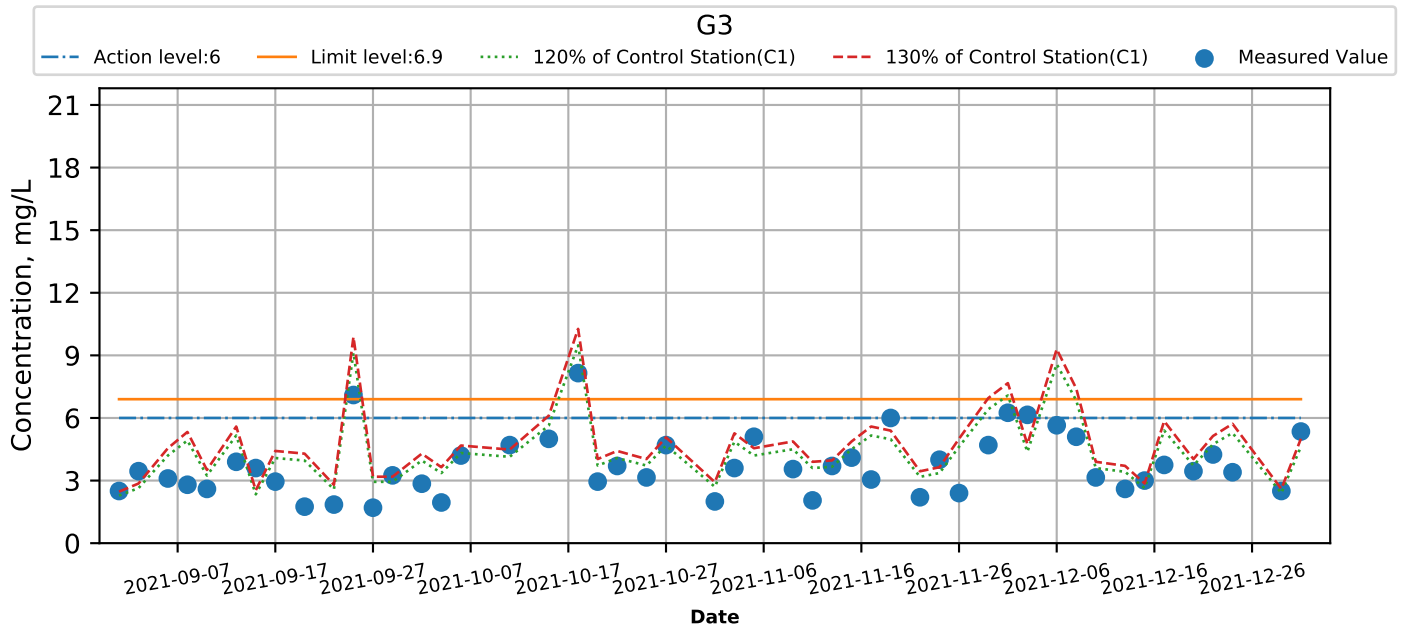
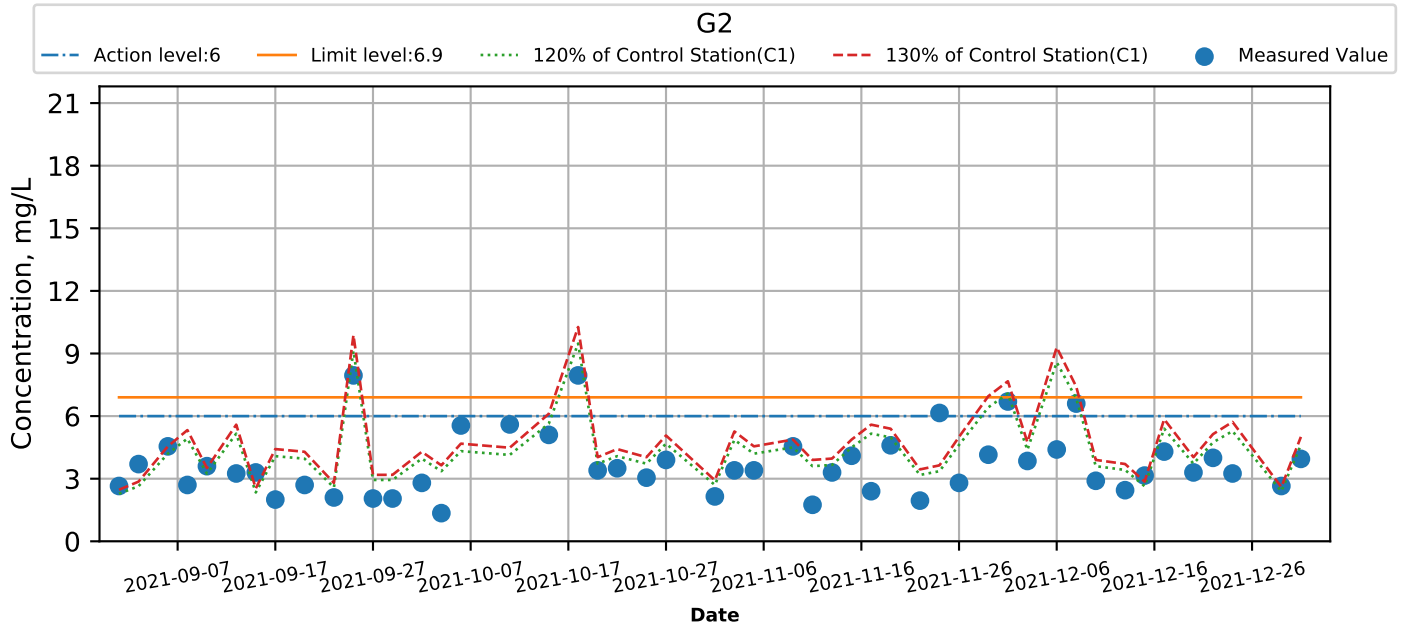
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Flood



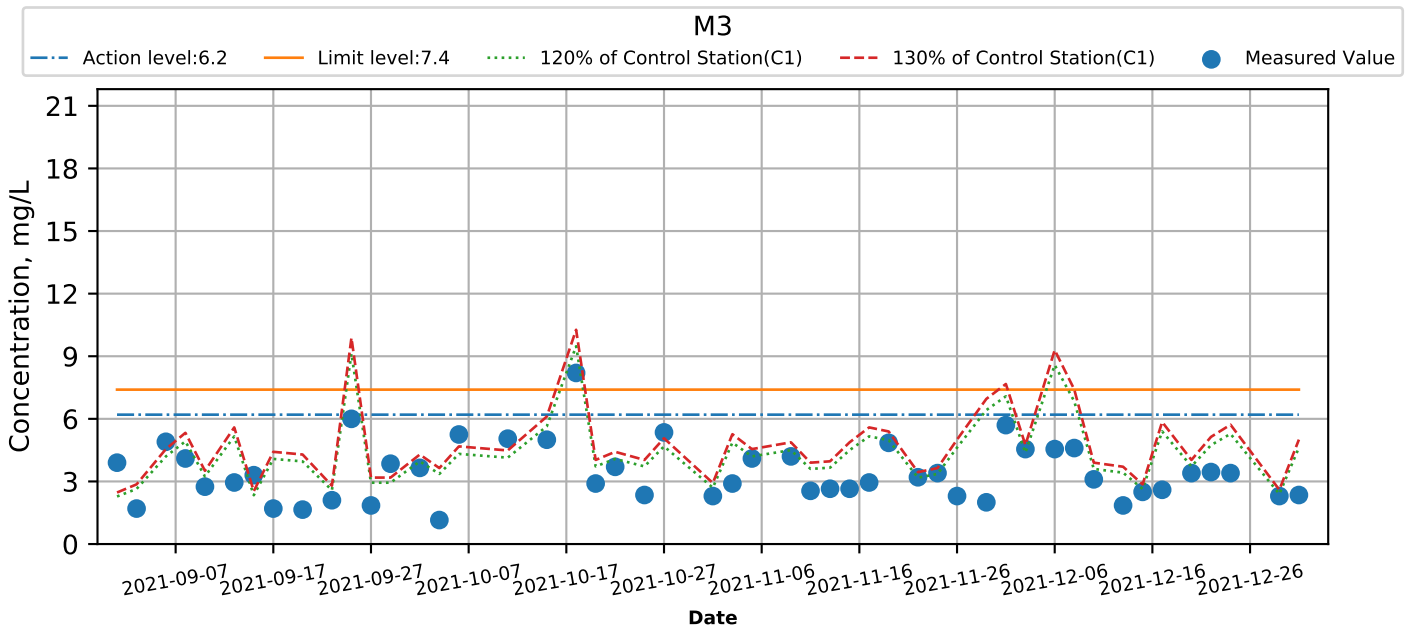
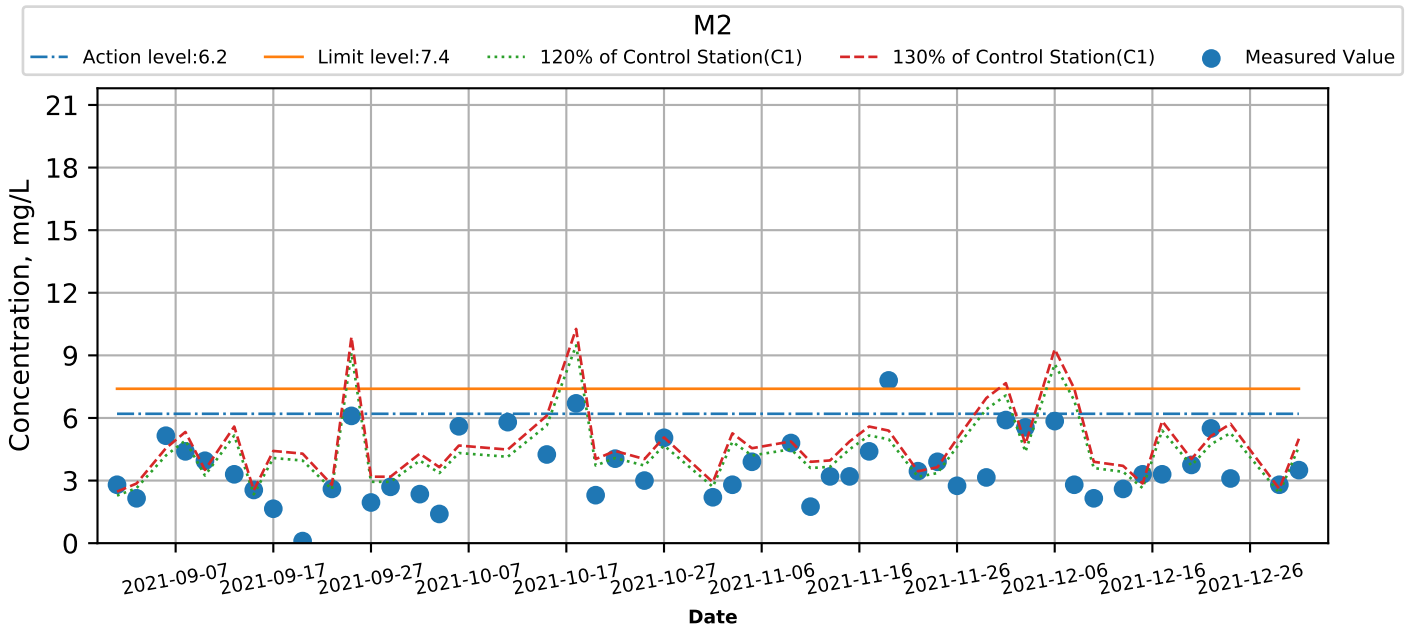
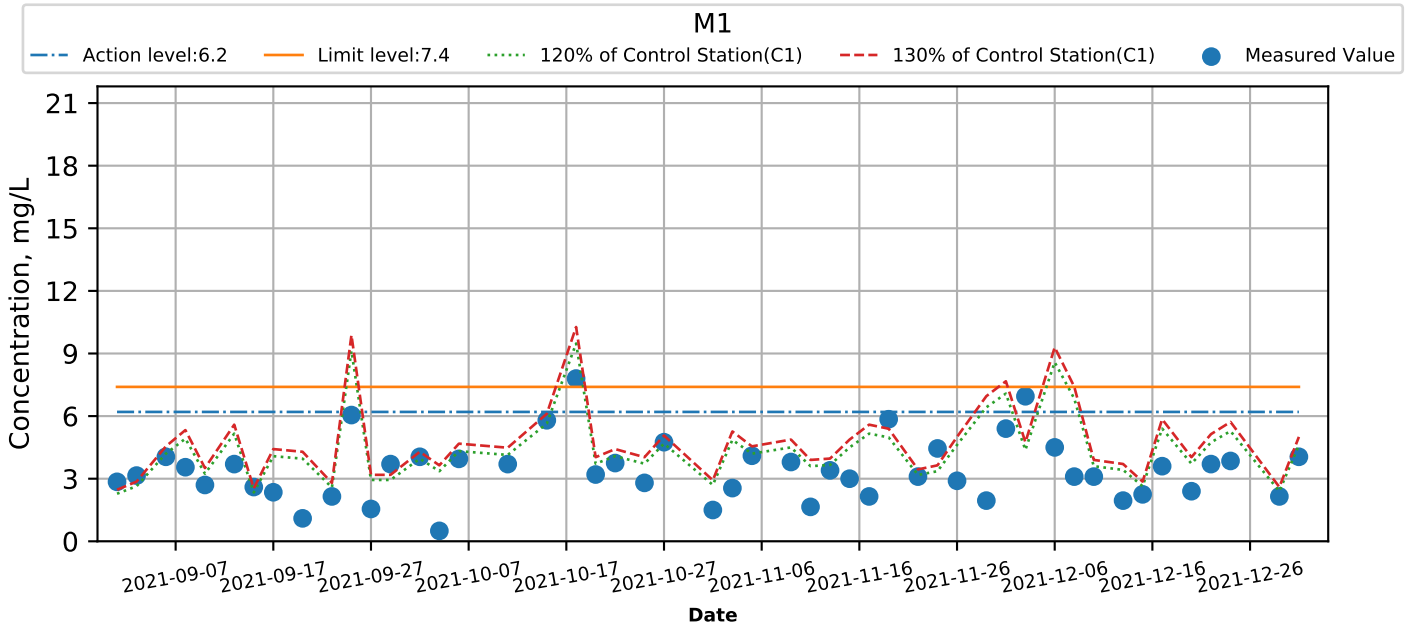
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Flood



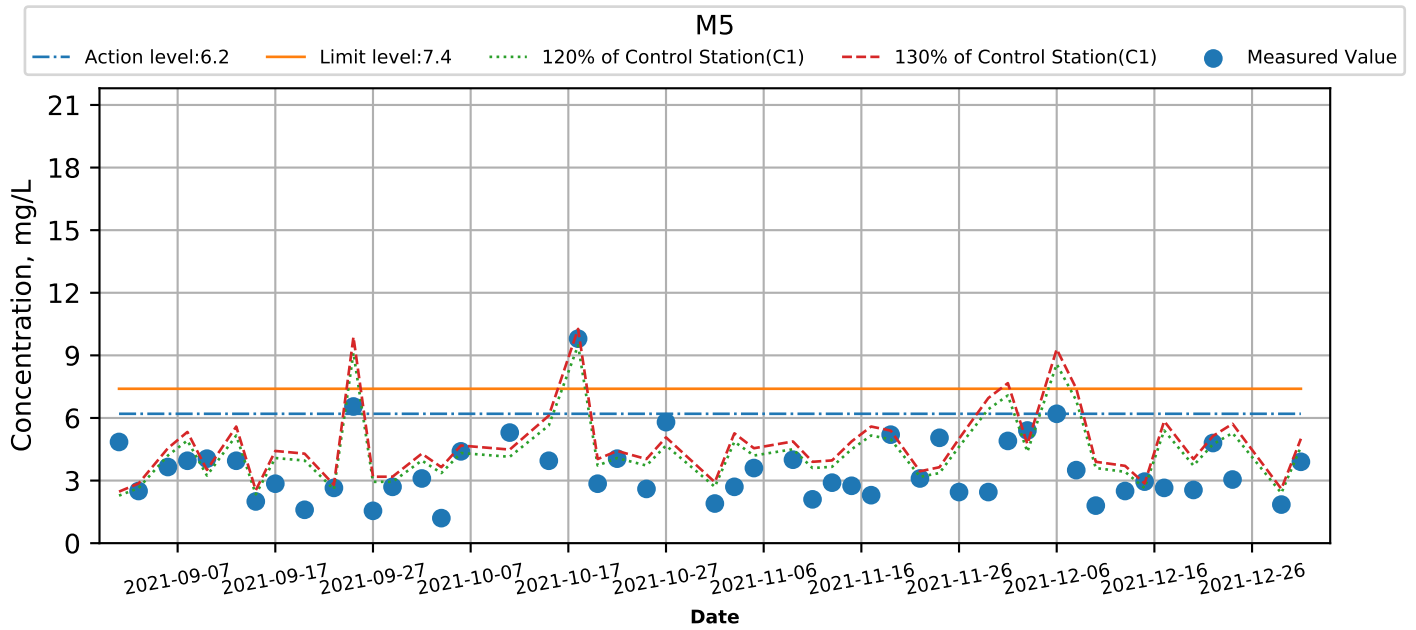
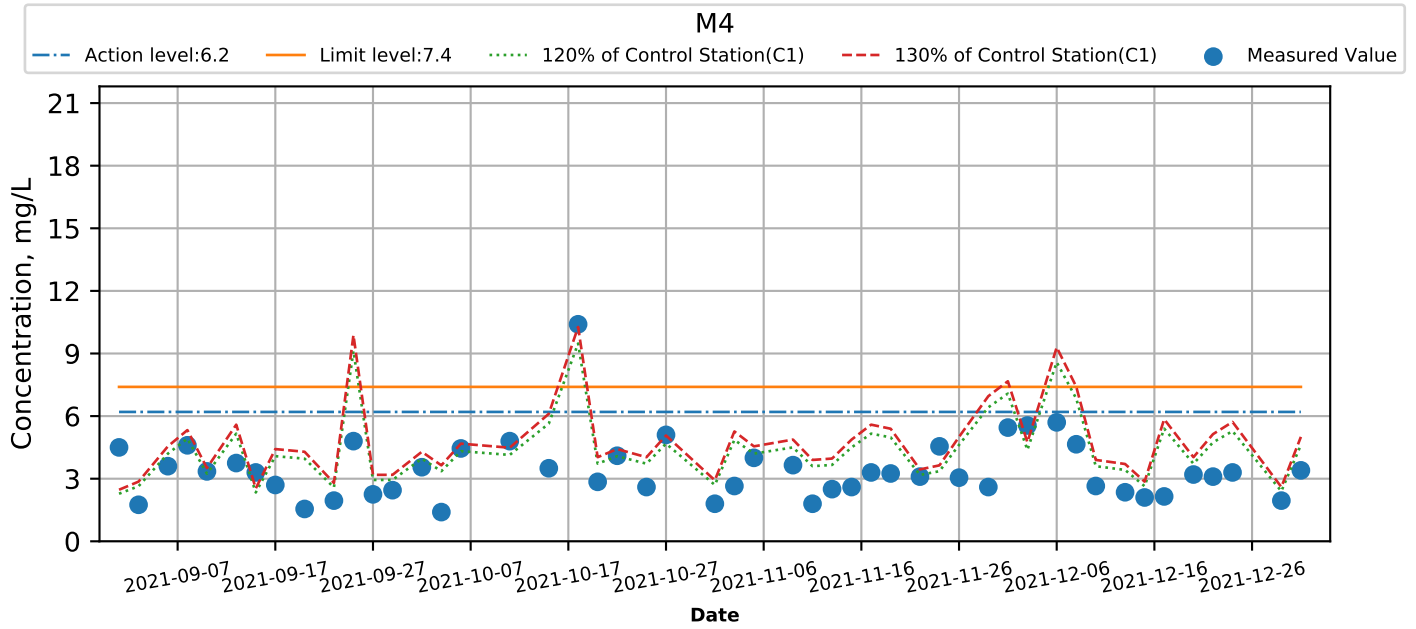
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Flood



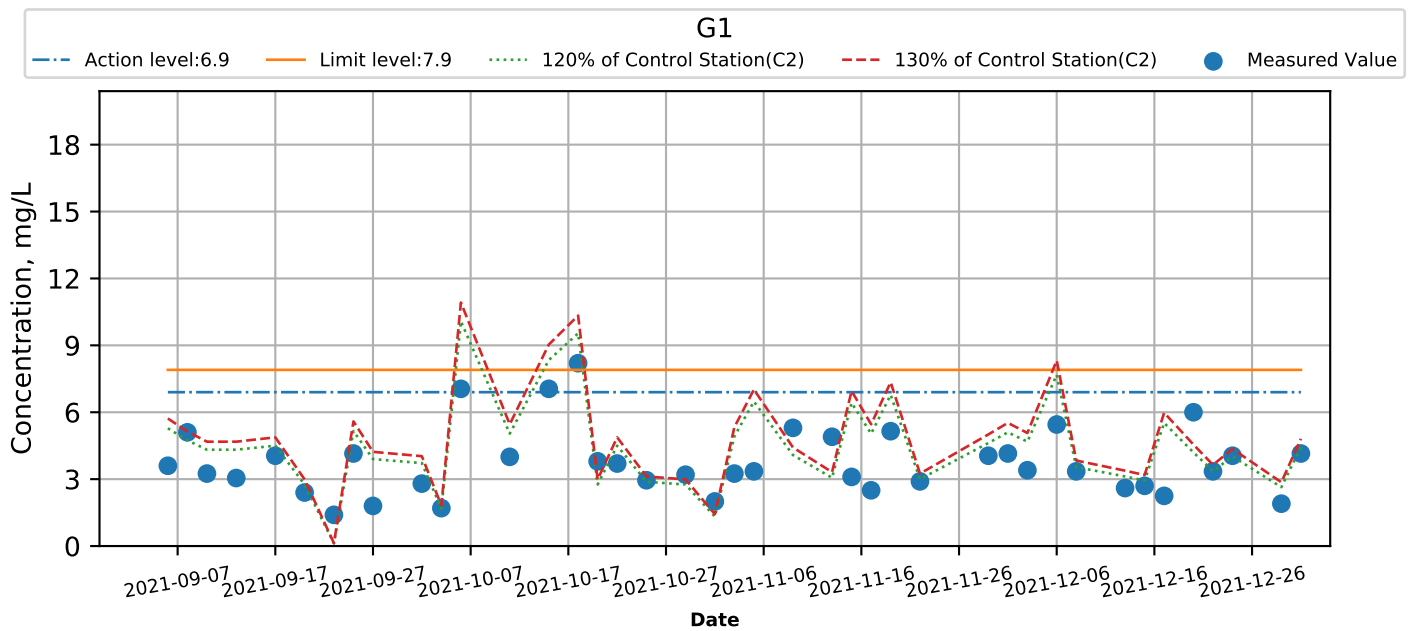
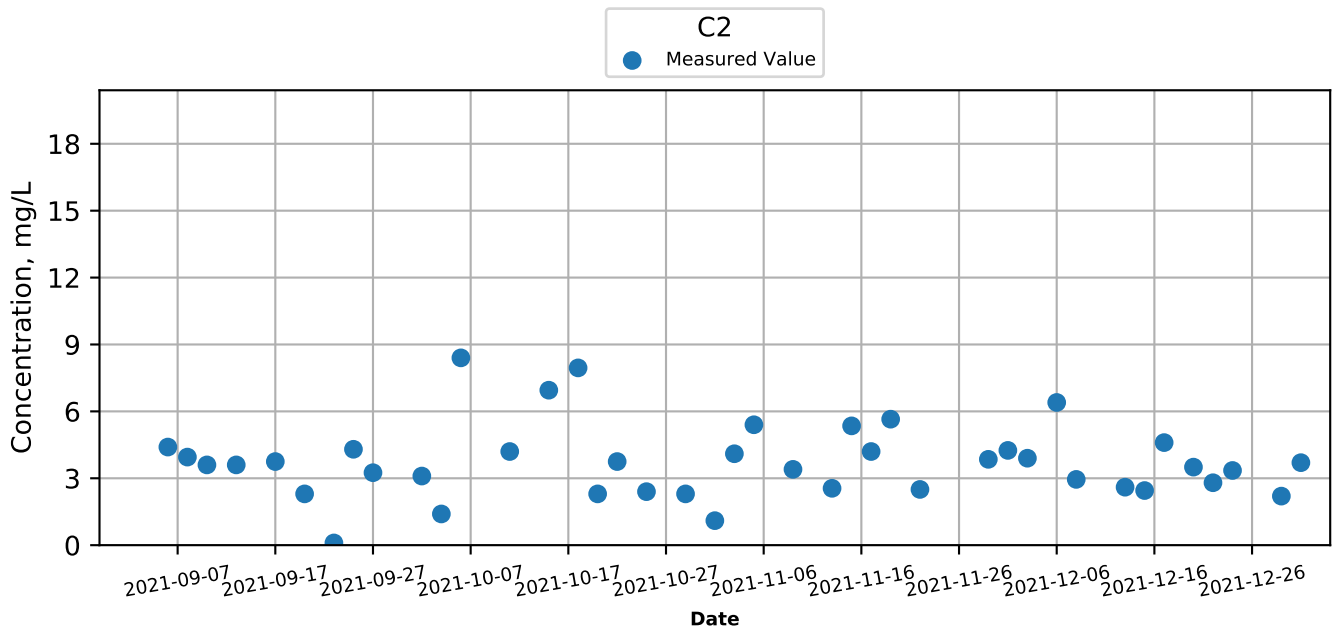
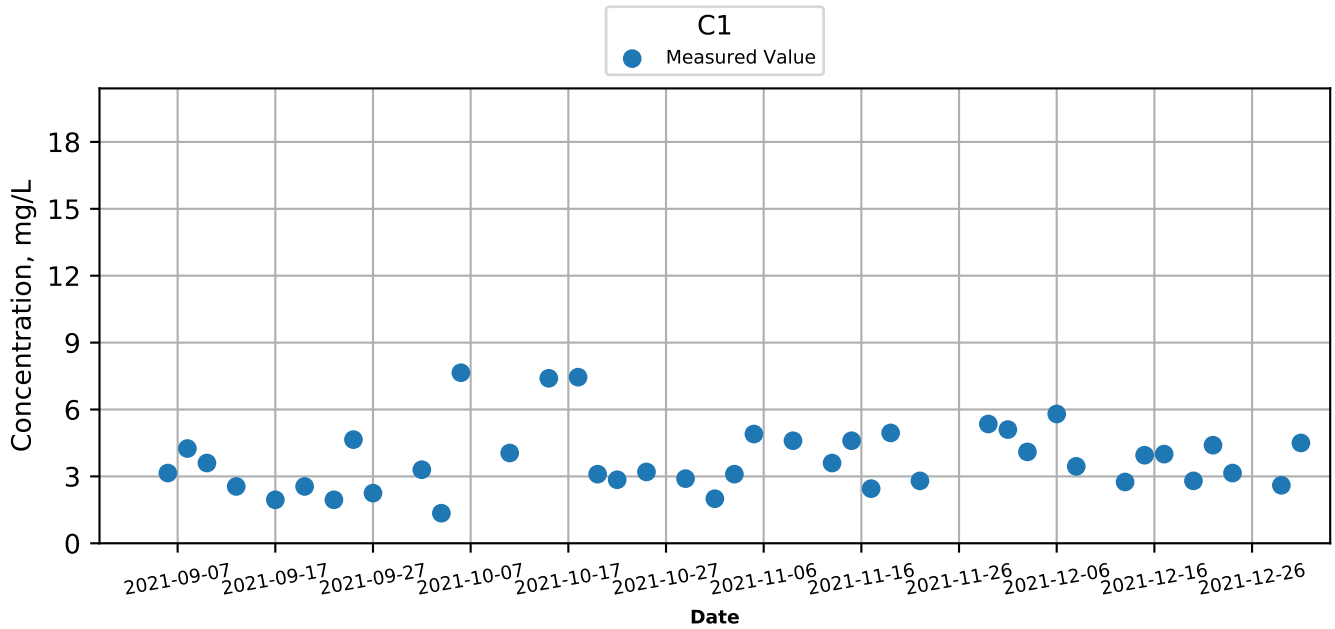
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Surface) at Monitoring Stations during Mid-Flood



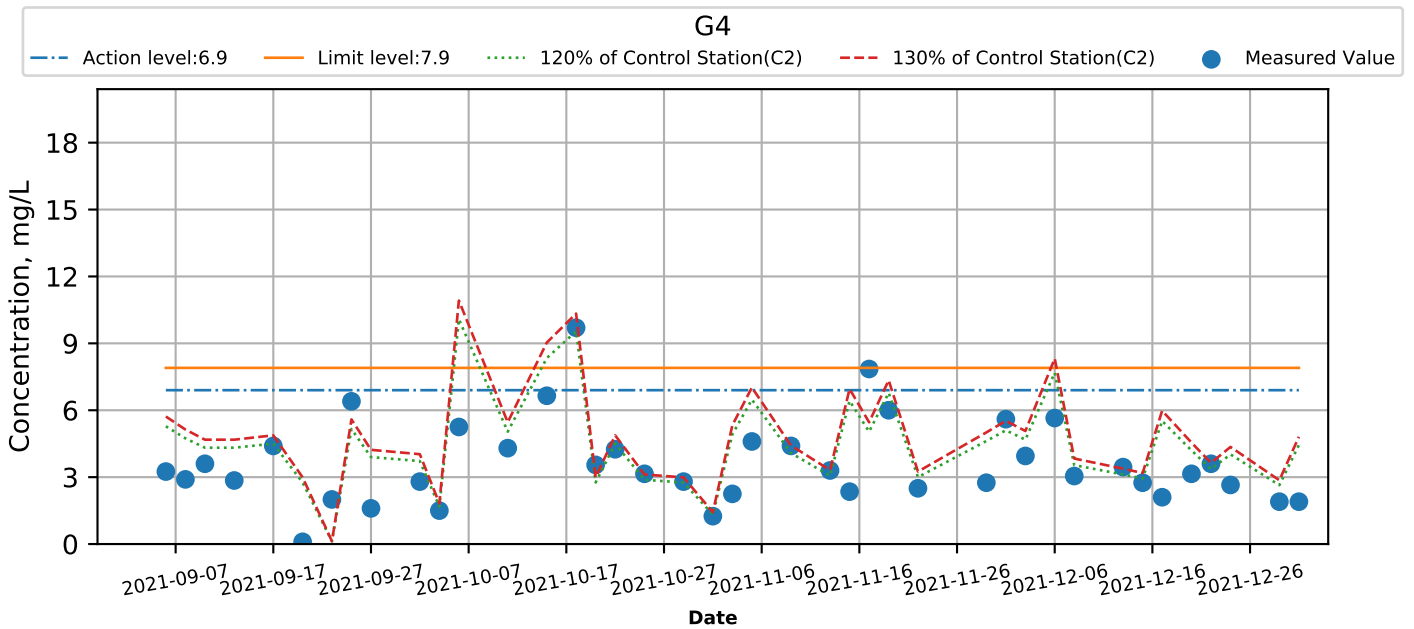
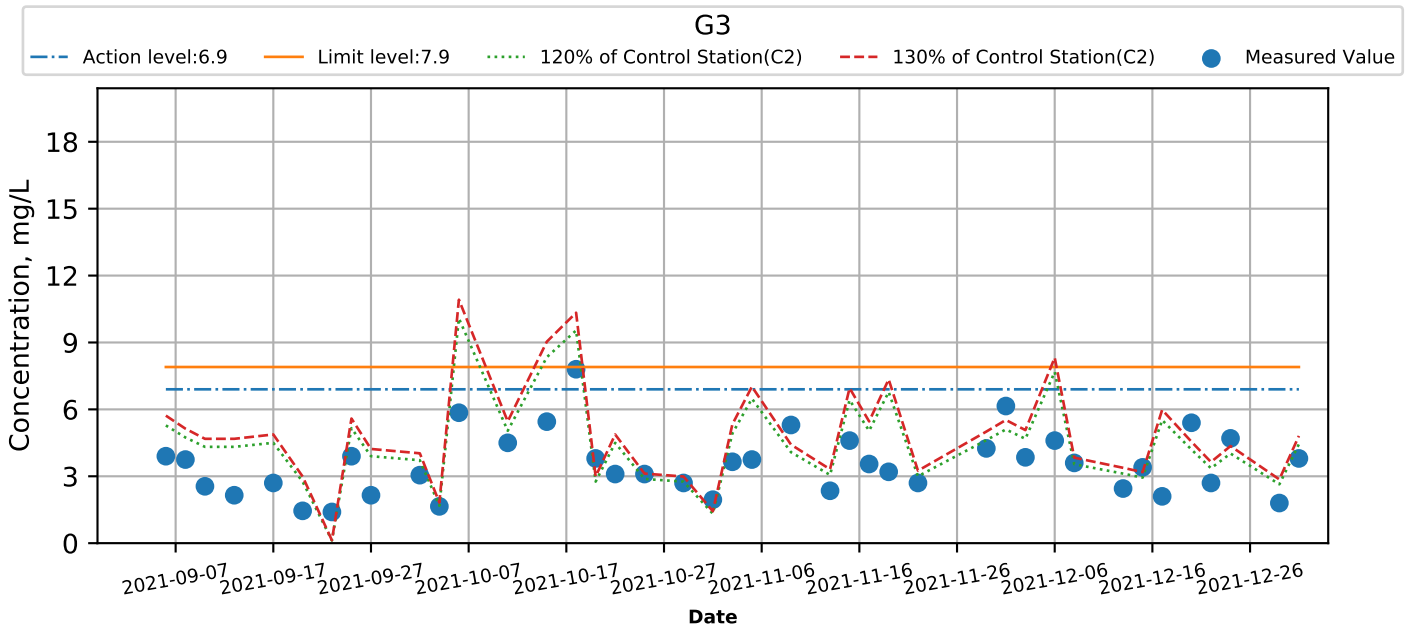
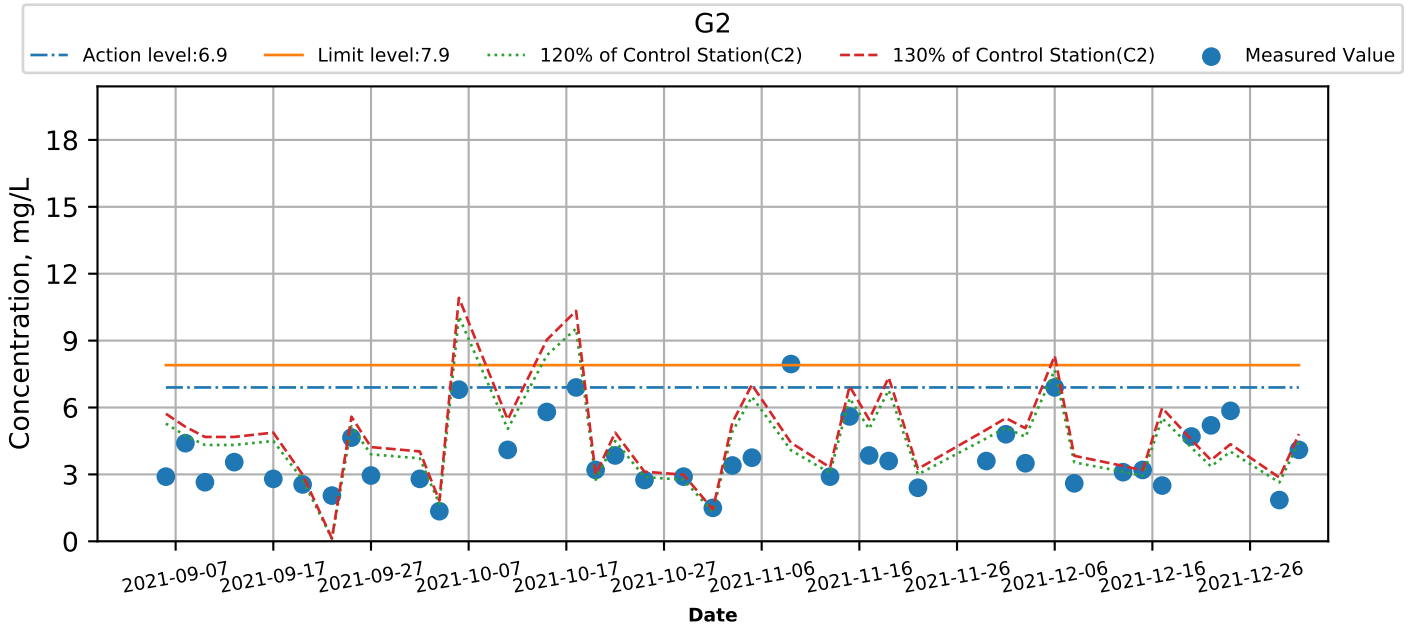
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Ebb



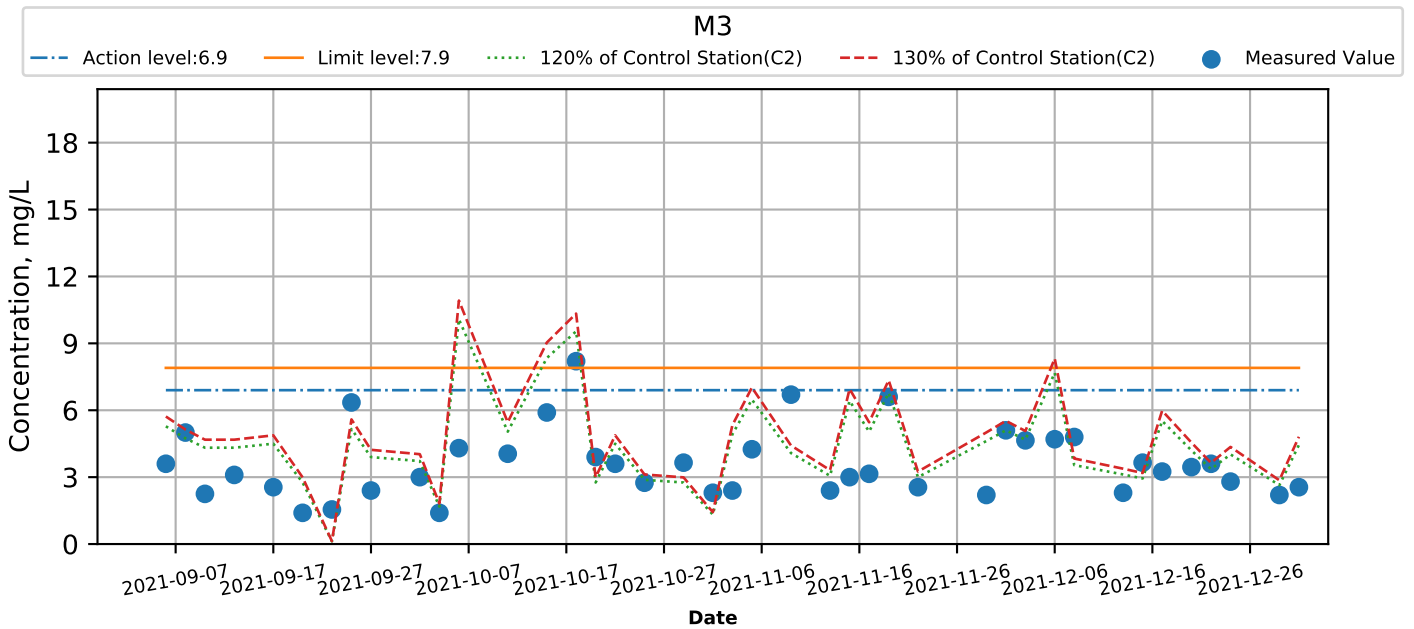
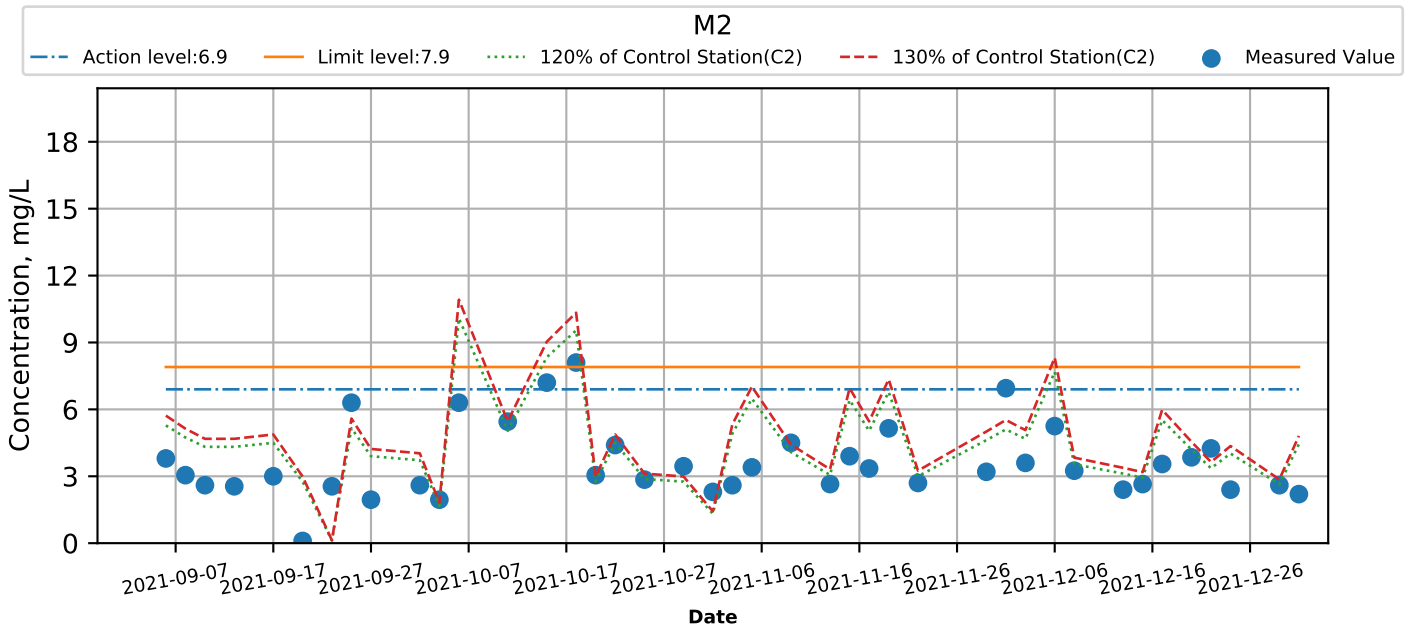
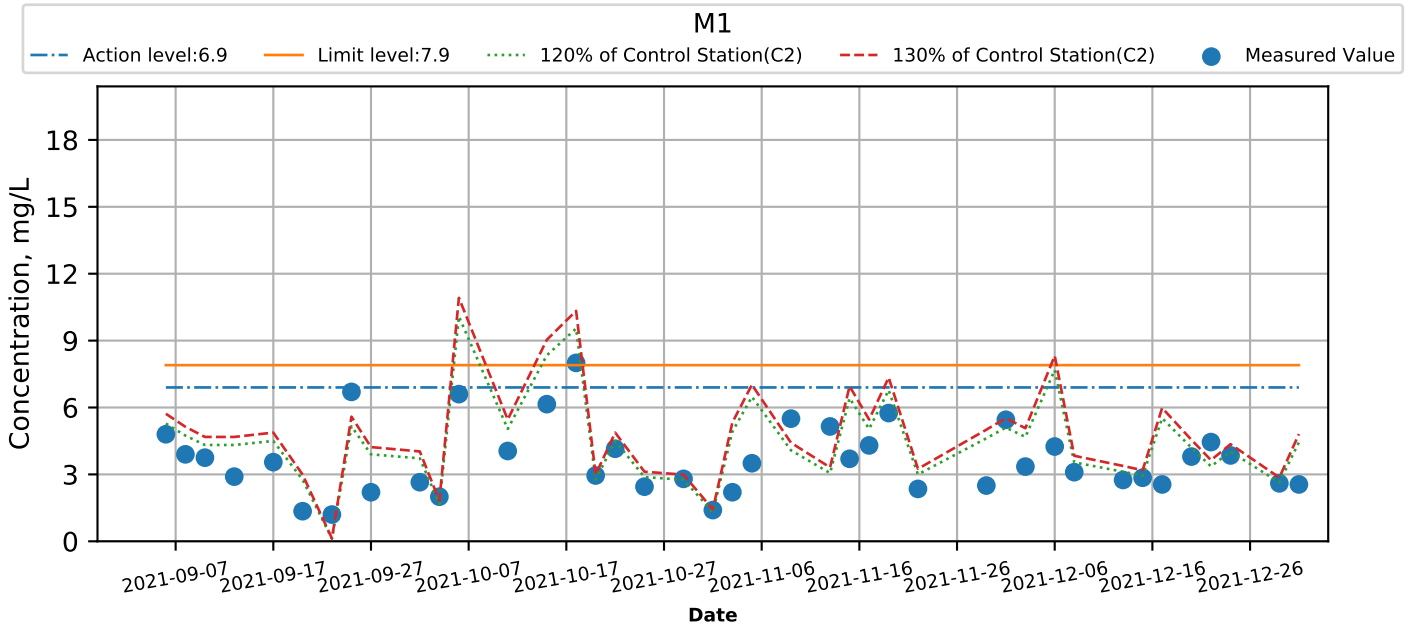
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Ebb



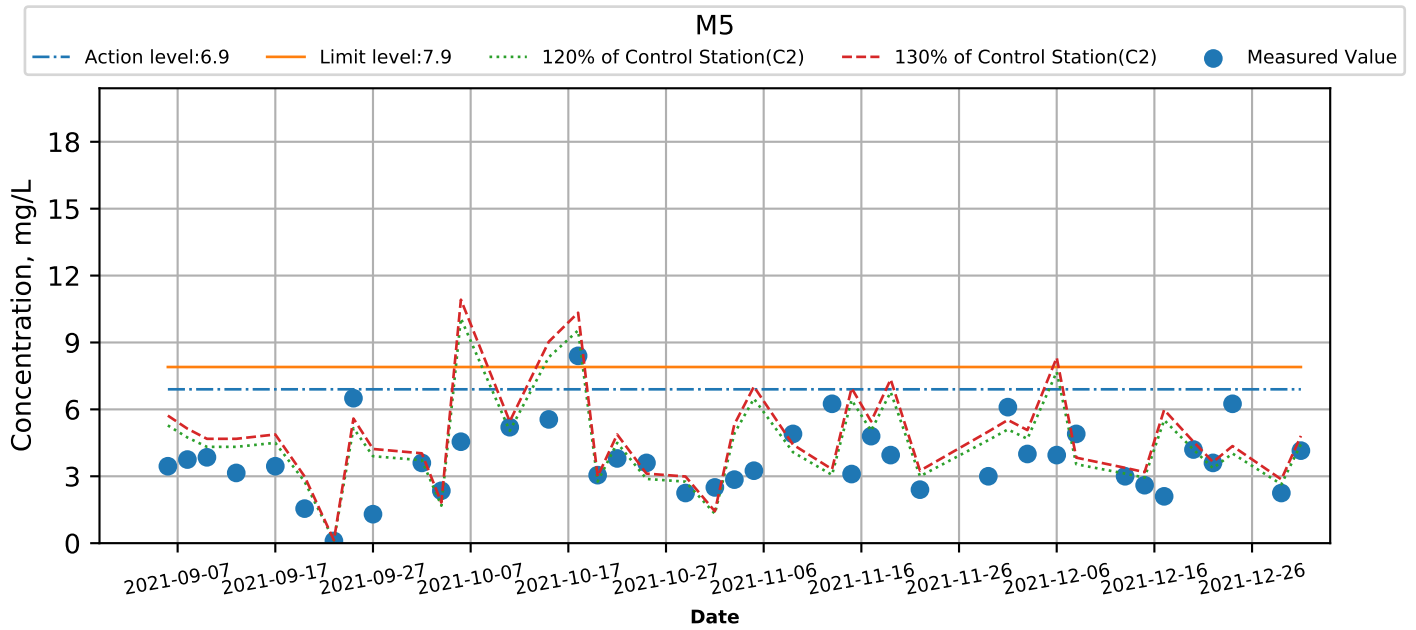
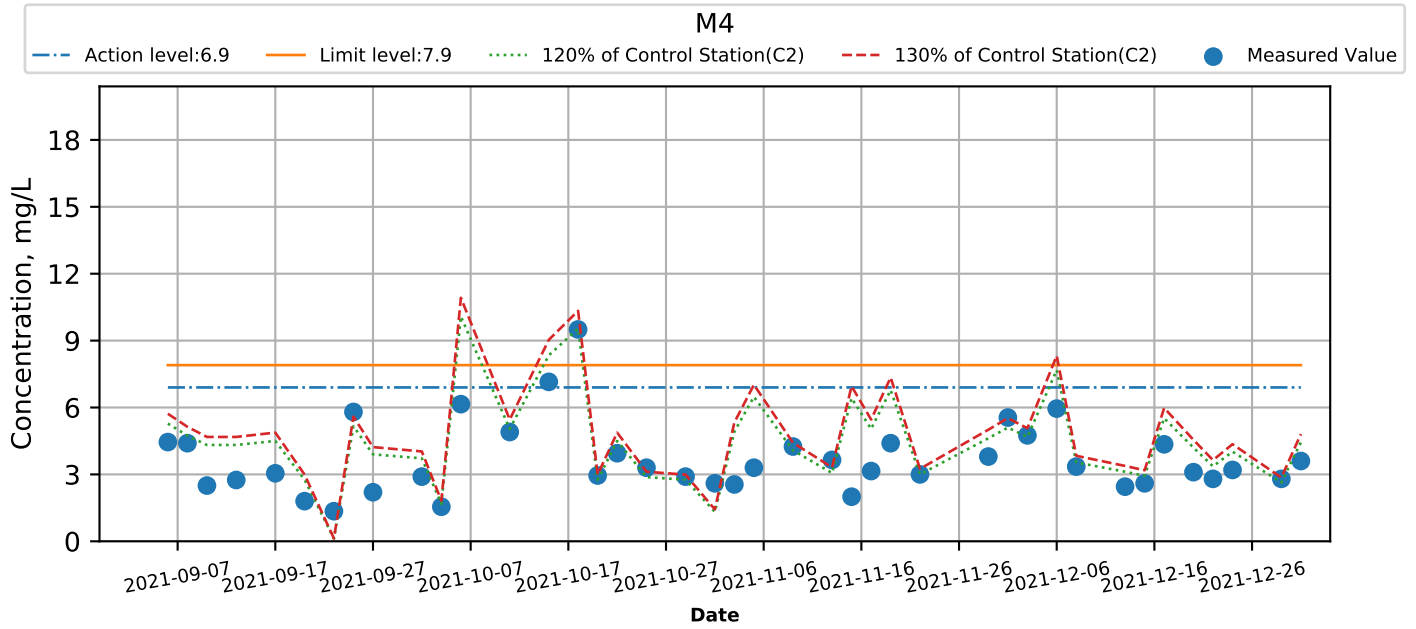
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Ebb



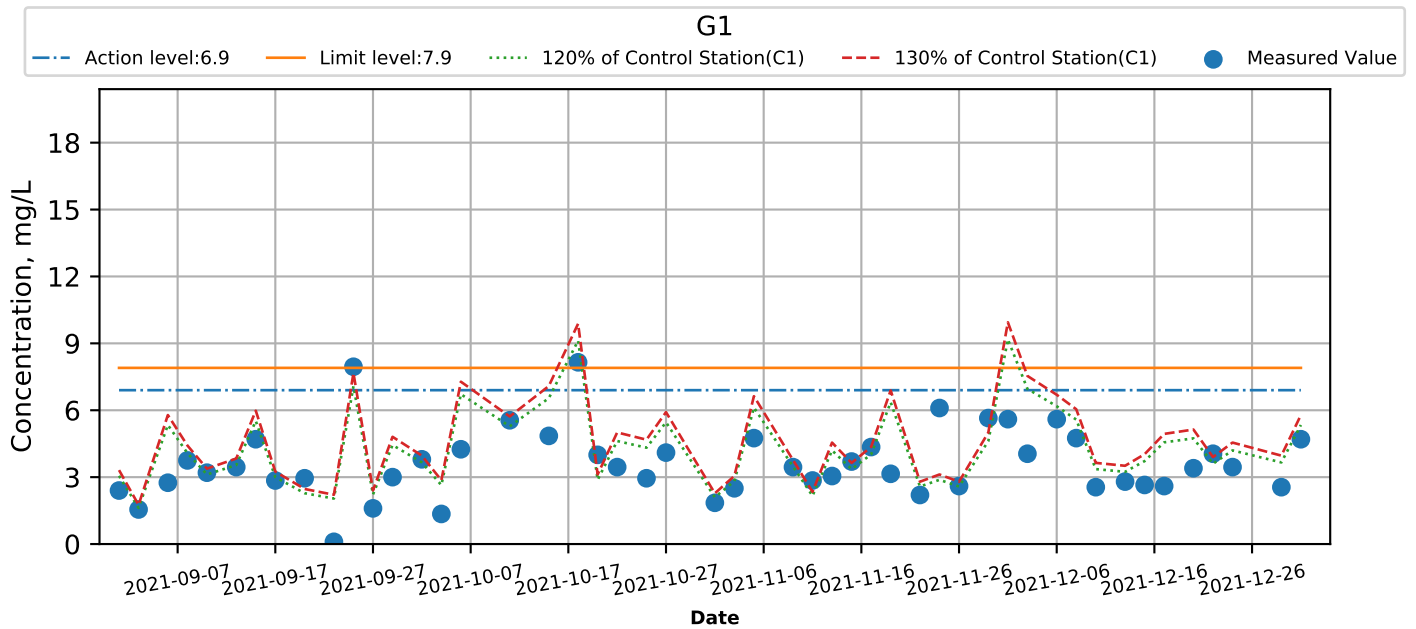
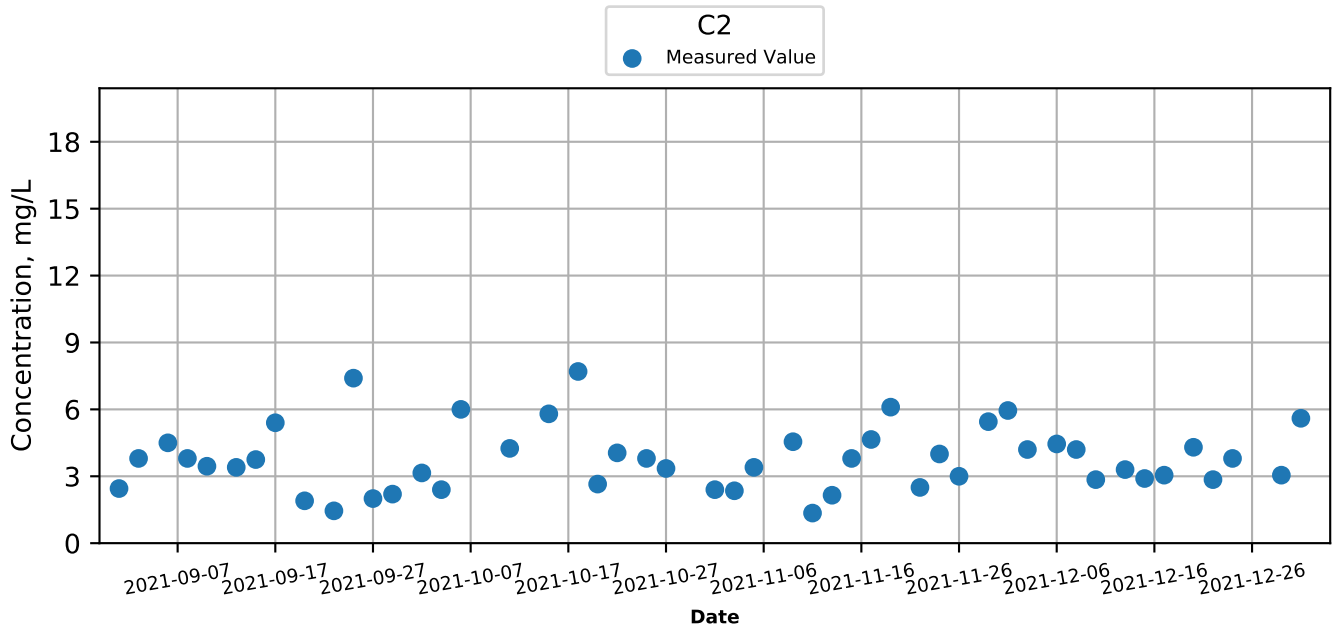
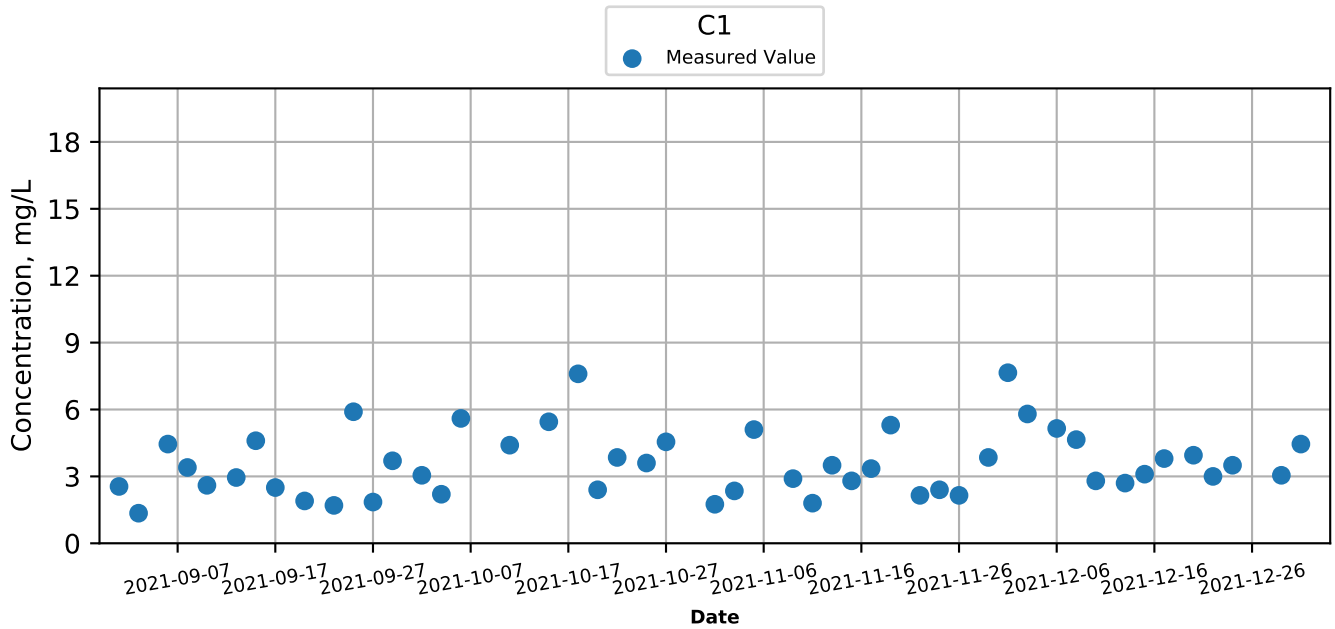
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Ebb



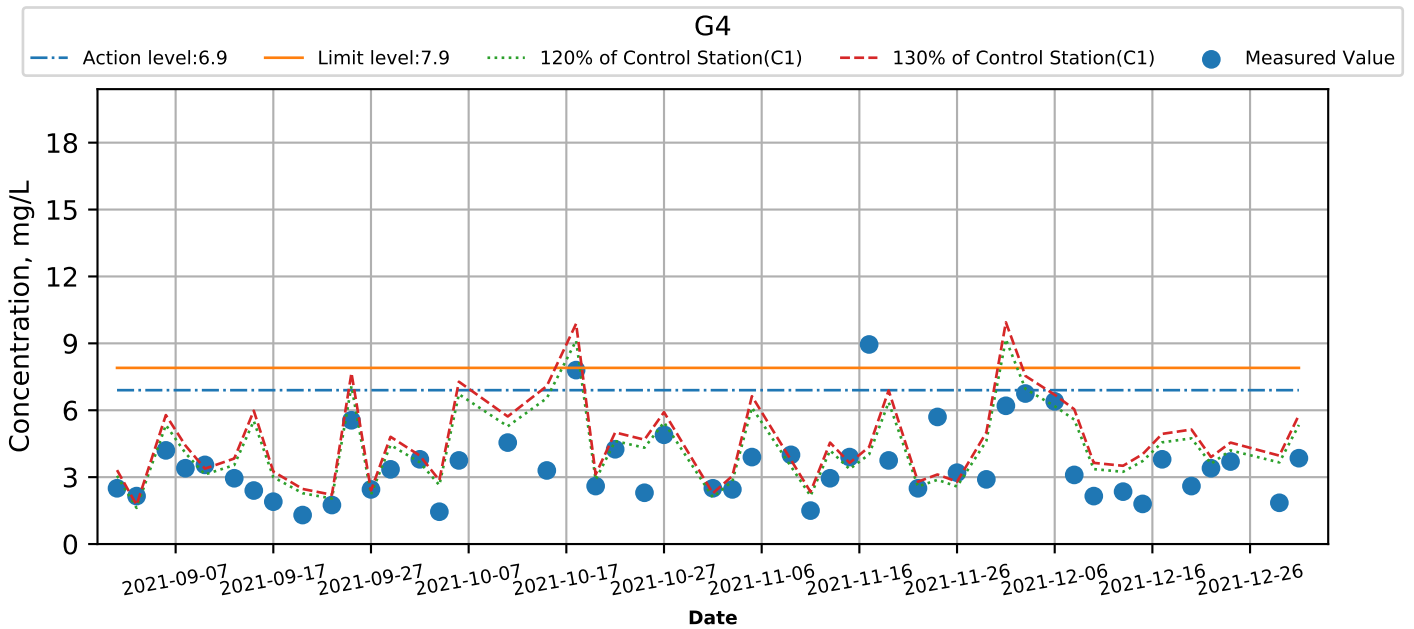
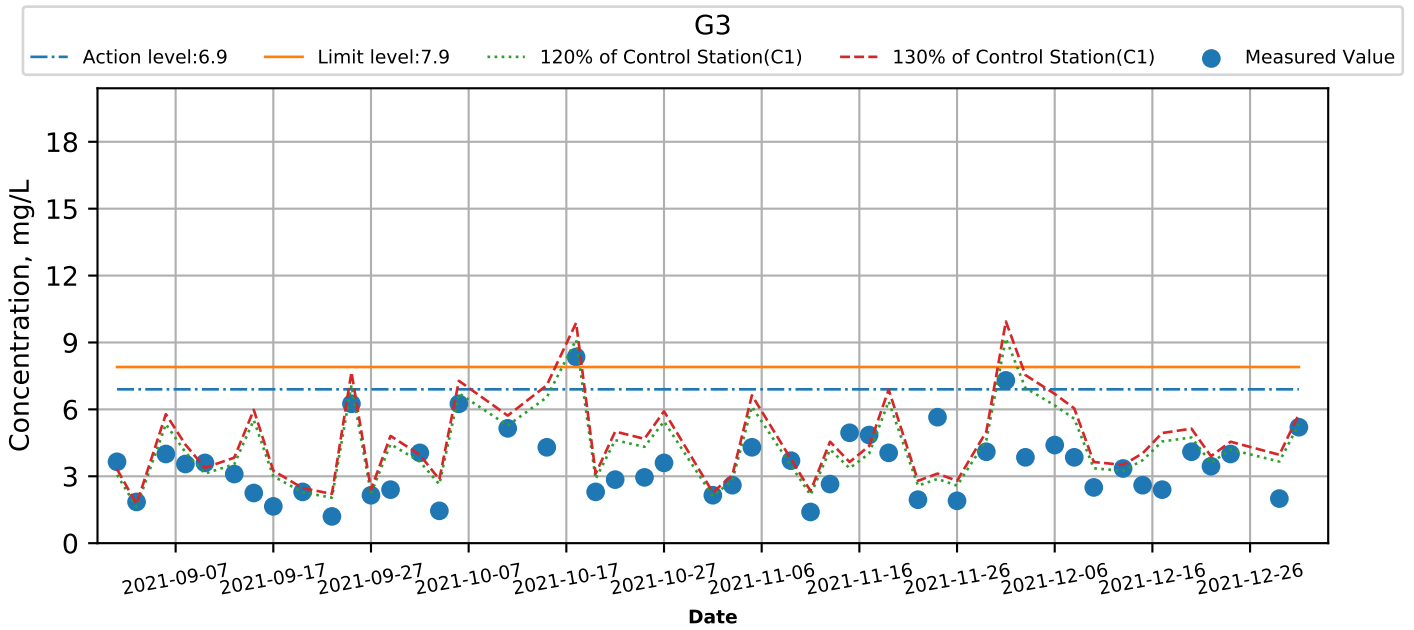
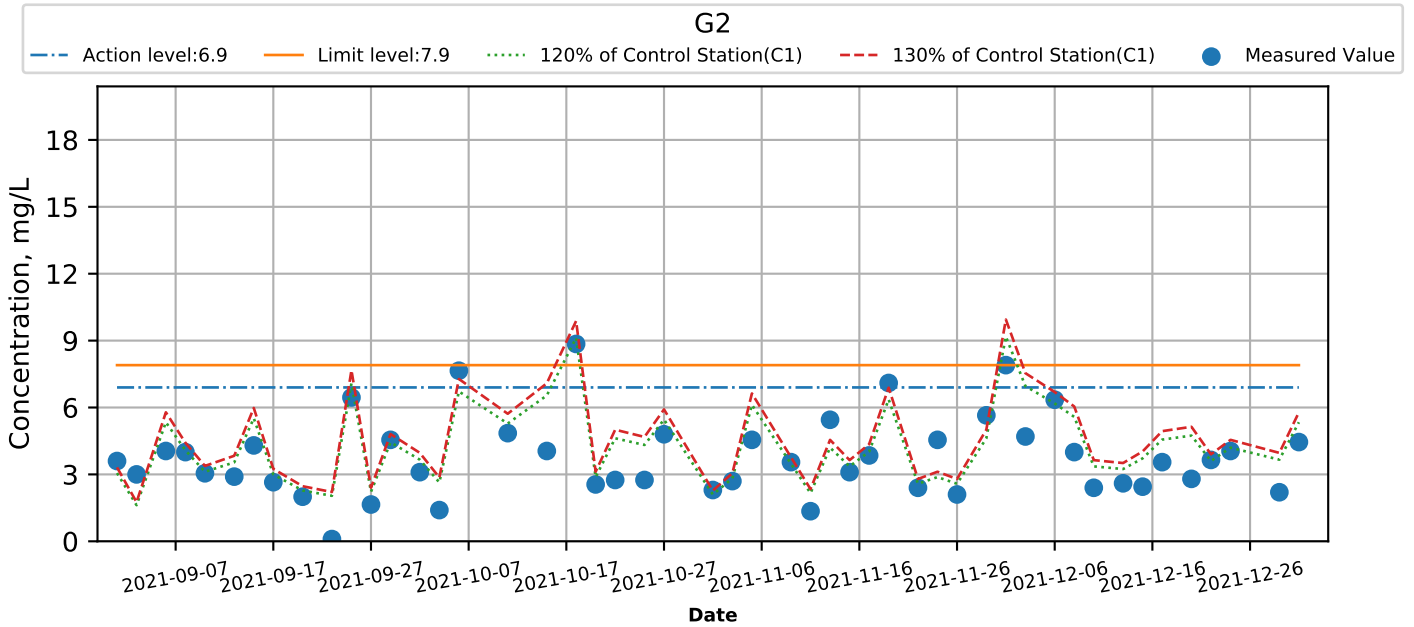
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Flood



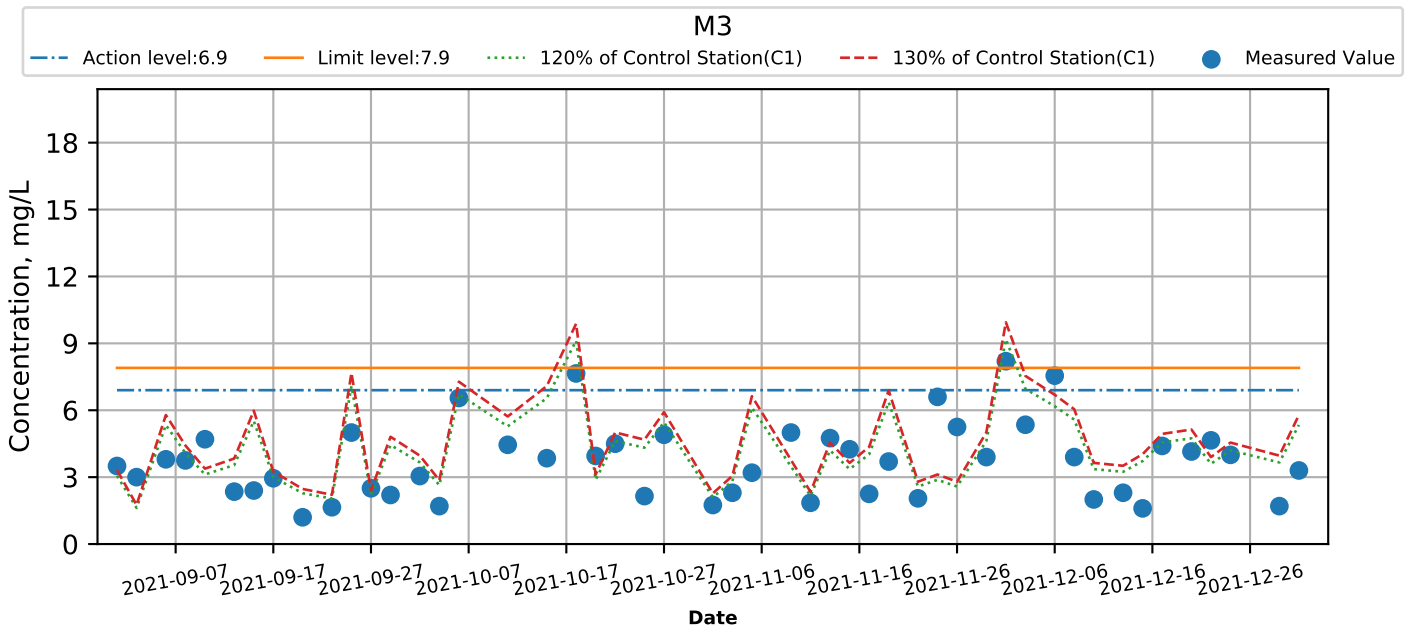
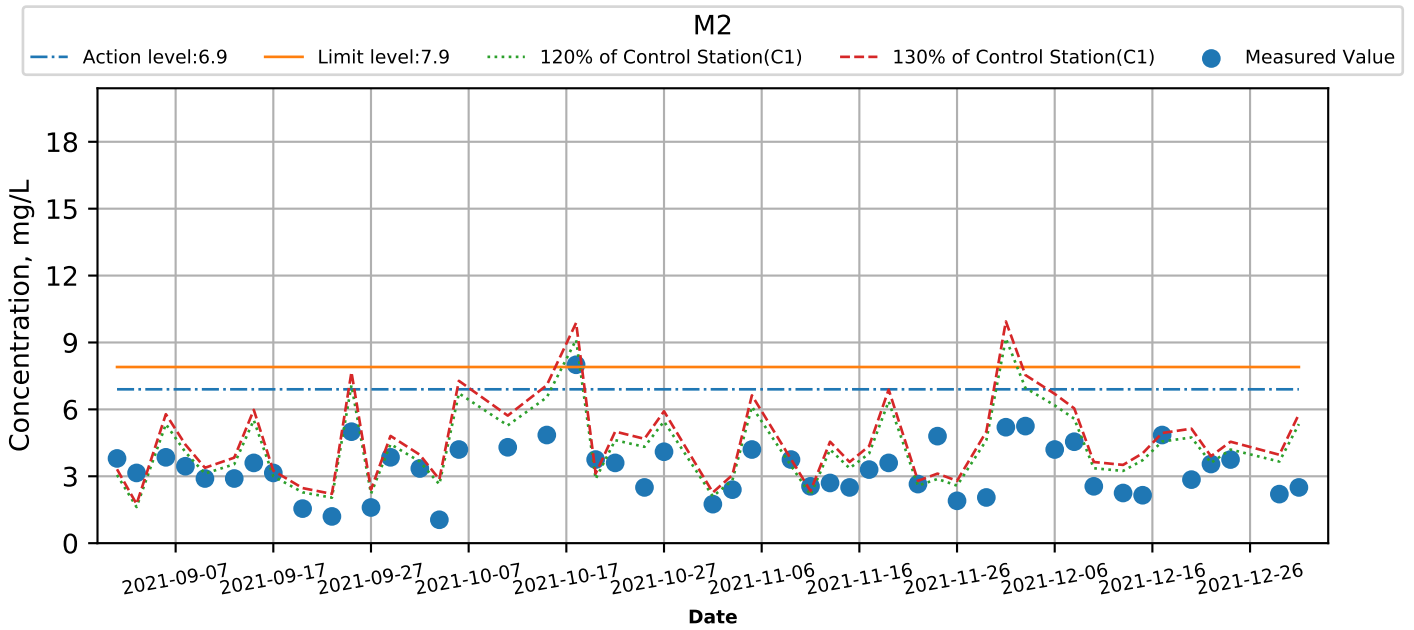
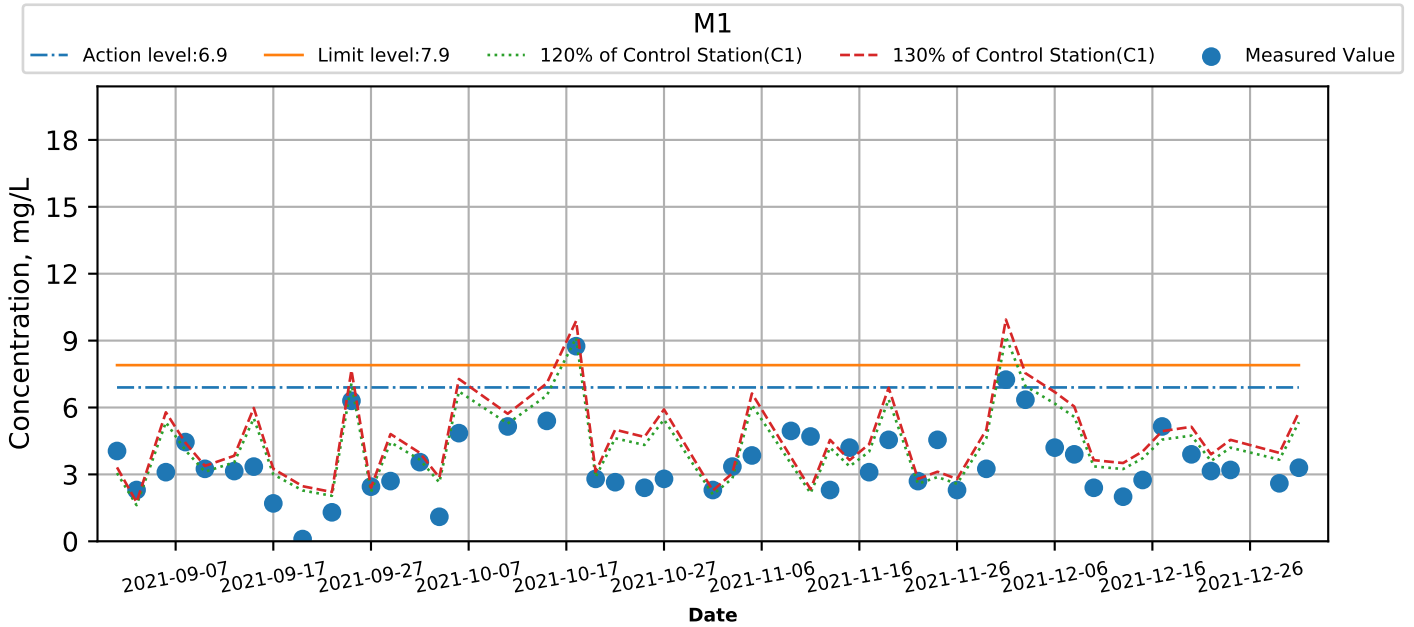
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Flood



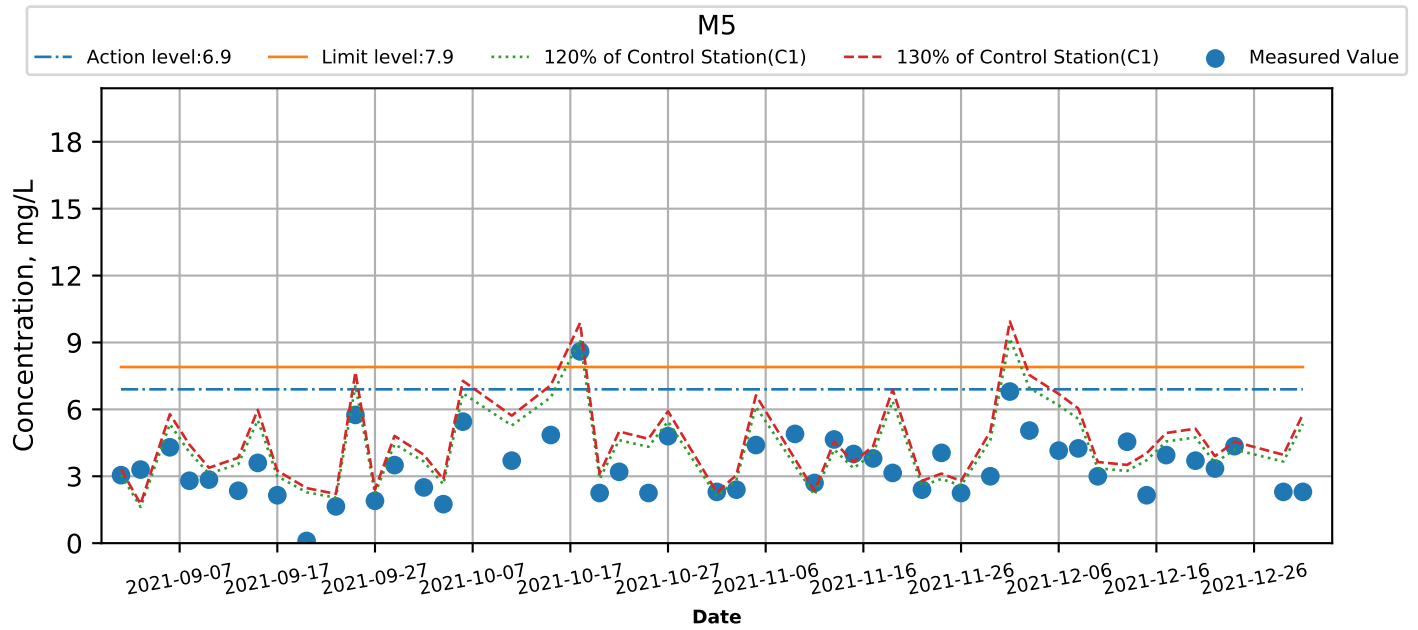
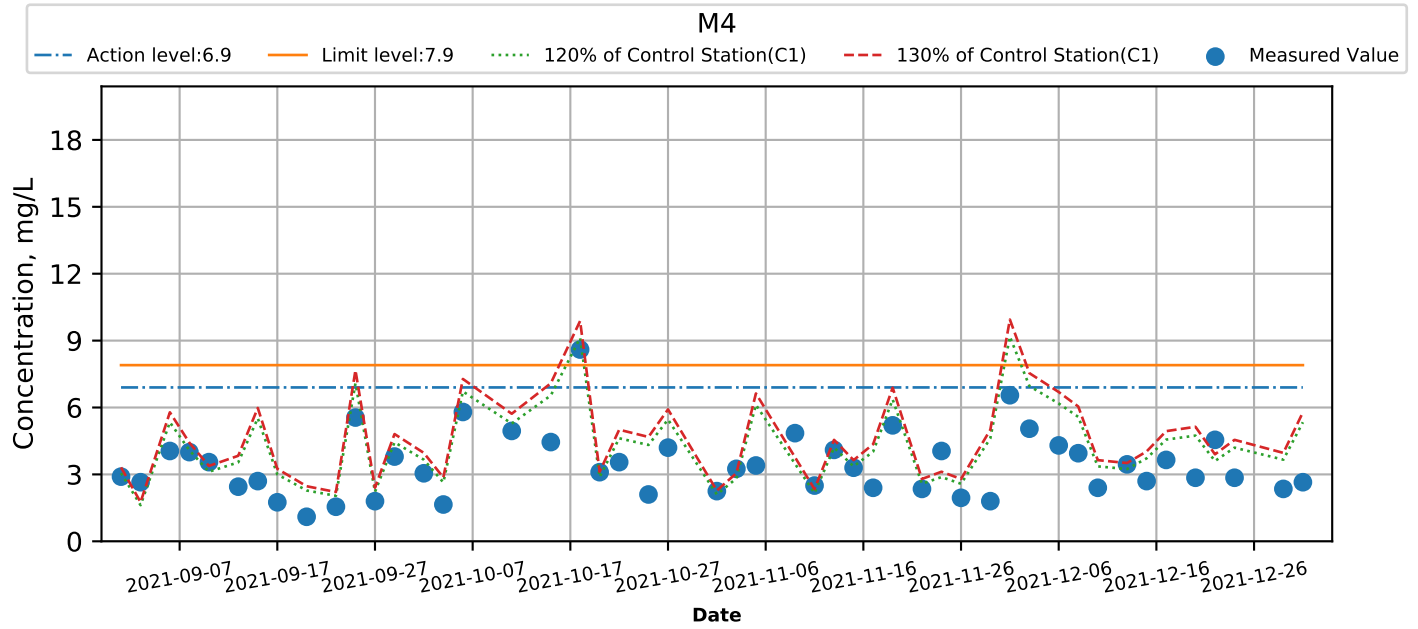
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Flood



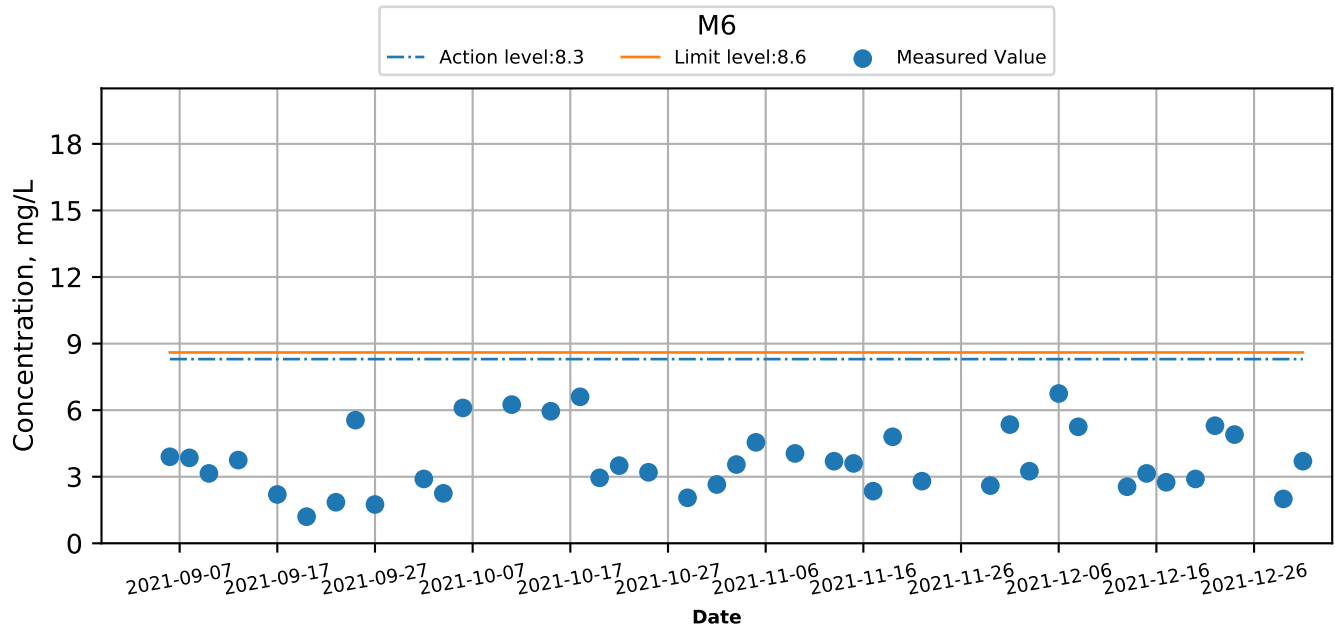
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Bottom) at Monitoring Stations during Mid-Flood



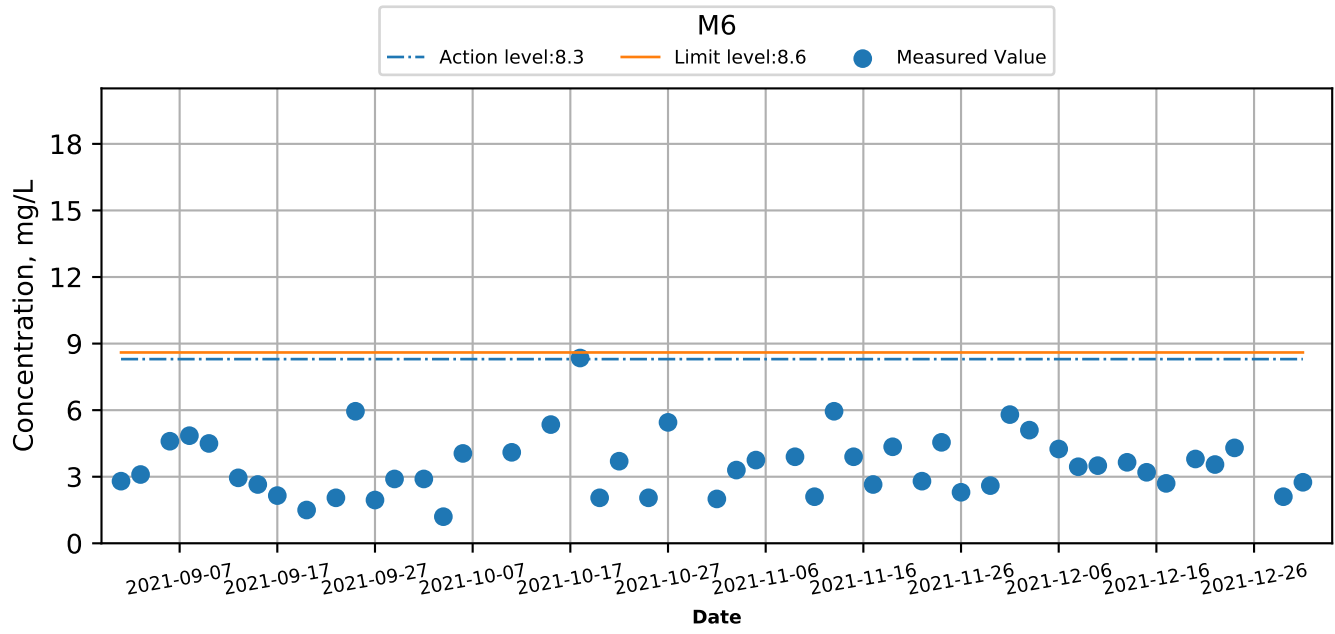
Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Intake level) at Monitoring Stations during Mid-Ebb



Graphical Presentation of Water Quality Monitoring Results (Sep-2021 to Dec-2021)

Suspended Solids (Intake level) at Monitoring Stations during Mid-Flood



**APPENDIX J
QUALITY CONTROL REPORTS FOR
LABORATORY ANALYSIS**

QUALITY ASSURANCE & QUALITY CONTROL

ALS Hong Kong is staffed with qualified chemists who conduct analytical testing using well documented procedures based on the universally recognised methodologies of USEPA, APHA, ASTM.

All laboratory procedures are regulated by comprehensive QA / QC programmes established to monitor and control every aspect of the operation. A minimum of 10% of all samples analysed by ALS Technichem are part of the Quality Assurance protocol.

The laboratory is HOKLAS accredited (Reg. No. 066) for a large range of chemical and biological tests covering environmental and food analyses.

Our QA/QC procedures are designed to ensure reliable analytical results to our clients.

1. INSTRUMENT CALIBRATION

All equipment and instruments meet the requirements and specifications of the documented test procedures.

1.1 Daily Performance Checks

The performance checks are carried out once in every 24 hour operating period for most capital instruments, such as:

- Liquid Chromatography – Mass Spectrometry/Mass Spectrometry
- Gas Chromatography – Mass Selective Detector
- Gas Chromatography – Flame Ionization Detector
- Gas Chromatography – Electron Capture Detector
- Inductively Coupled Plasma – Mass Spectrometer
- Inductively Coupled Plasma – Atomic Emission Spectrometer
- Flow Injection Mercury Analyzer
- Automatic Discret Analyzer
- Flow Injection Analyzer
- Electronic Balance

Should the instrument fail the daily check repeatedly then the appropriate maintenance is undertaken to rectify the problem prior to sample analysis.

1.2 Calibration

A minimum 5 point calibration covering the working range of the samples to be analysed is run with each group of samples. Laboratory Blanks are run at a frequency of 1 in every 20 samples or 1 between each analytical lot of samples, which ever is the more frequent.

A mid-range calibration standard is analysed regularly during the operating period to ensure consistency.

1.3 Calibration Check

A calibration standard is analysed regularly during the operating period to ensure consistency.

2. QUALITY CONTROL (QC) SAMPLES

QC samples comprise those which monitor and control the laboratory performance namely Laboratory Control Sample (LCS), Duplicate Control Sample (DCS), Method Blanks and those which are used for data assessment and the evaluation of matrix effects by using Surrogates, Matrix Spike (MS), Matrix Spike Duplicate (MSD) and Sample Duplicates.

Field contamination is monitored by the analysis of Trip Blanks (VOCs) and Equipment Rinsate Samples.

The organics laboratory processes field samples in QC lots of 20 according to the analysis required. These 20 samples may consist of a number of sample batches independently submitted to the laboratory.

The inorganics laboratory lots samples in groups of 20 to 50 depending on the analyte to be determined. Quality control samples such as Laboratory Blanks and Quality Control Sample, and/or Certified Reference Materials (CRM) are run at a frequency of 1 in 20 per 'lot' of samples. Sample Duplicates and Matrix Spikes are run at a frequency of 1 in 20 or 1 per batch, whichever is more frequent.

2.1 Laboratory Control Sample (LCS) & Duplicate Control Sample (DCS) - (Organics only)

(a) Accuracy - the closeness of agreement between an observed value and a reference value.

The observed value is the average of the LCS and the DCS values. The reference value is the spike value. The accuracy is expressed as the % Recovery and is calculated as follows:

$$\% \text{ Recovery} = (\text{Observed Value} / \text{Spiked Value}) \times 100$$

(b) Precision - the agreement among a set of replicate results.

Precision is expressed as the Relative Percent Difference (RPD) between the LCS and DCS detected levels, against the average of these levels.

The RPD is calculated as follows:

$$\text{RPD} = [(\text{Results 1} - \text{Result 2}) / \text{Average}] \times 100$$



QUALITY ASSURANCE & QUALITY CONTROL

The accuracy and precision data are evaluated against laboratory established control limits. (If laboratory control limits have not been established for a particular method, control limits as specified in USEPA SW 846 may be utilised).

QC results falling outside the control limits are automatically flagged.

The acceptance criterion used is that 80 percent of the precision and accuracy values must fall within the control limits. If this criterion is not met, corrective action must be taken. This may include repeat sample analysis.

2.2 Laboratory / Reagent Blank

For the laboratory blank to be acceptable, the concentration in the blank of any analyte of concern should not be higher than $\frac{1}{2}$ of reporting limit (LOR) for that analyte.

Blank correction may be performed if the blank result is found to be greater than LOR and it is attributed to the analytical method and/or reagents involved.

2.3 Surrogates (Organics Only)

Surrogate results are reported as percent recovery. Since surrogate spike recoveries indicate the presence of sample specific interferences, USEPA documented recovery limits are used as a guidance only.

The surrogate standards are used for semivolatile and volatile analyses. The semivolatile analysis includes SVOC, pesticide and PCB tests. The volatile analysis includes VOC and BTEX.

2.4 Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

MS and MSD results are used for data assessment and evaluation of method precision and bias in a given matrix.

2.5 Sample Duplicate

The duplicate results are used for evaluation of laboratory precision in a given matrix.

The RPD values of the duplicates are used as the rejection or acceptance criteria.

Generally, water samples are repeated if the RPD is greater than 20 percent and there is sufficient sample for reanalysis.

The RPD for soils should be within 25 percent, however, this may be dependent upon sample homogeneity.

QUALITY ASSURANCE & QUALITY CONTROL

TABLE 1: QC TERMS, DEFINITIONS, PURPOSE FOR MONITORING & FREQUENCY

QC TERM	DEFINITION	TO MONITOR	FREQUENCY
Work Order	A set of samples received from a customer for analysis.	-	-
QC Lot	A set of 20 samples analysed under the same analytical conditions. A QC Lot may consist of samples from a number of work orders.	-	-
Analytical Lot	A group of samples prepared at the same time for a given analyte.	-	-
Control Limits	Upper and lower limits based on statistical analysis of laboratory historical performance data.	Laboratory precision and bias.	-
Laboratory Quality Control Samples			
Method Blank (<i>BLK</i>)	An analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation.	Contamination introduced in the laboratory.	1 per QC lot of 20 samples
Sample Duplicate (<i>DUP</i>)	An intra-laboratory split sample randomly selected from the sample batch.	Method precision in a given sample matrix.	1 per QC lot of 20 samples
Matrix Spike (<i>MS</i>)	A split sample spiked with the target analytes prior to sample preparation and analysis.	Method bias in a given sample matrix.	1 per QC lot of 20 samples
Matrix Spike Duplicate (<i>MSD</i>)	An split sample spiked as per the MS.	<i>Ditto</i>	<i>ditto</i>
Laboratory Control Sample (<i>LCS</i>)	A known, interference free matrix spiked with target analytes.	Laboratory preparation technique.	1 per QC lot of 20 samples
Duplicate Control Sample (<i>DCS</i>)	As per the SCS.	Preparation technique reproducibility (precision).	<i>Ditto</i>
Certified Reference Material (<i>CRM</i>)	A certified reference material containing target analytes with known concentrations and associated uncertainties and	Monitoring overall performance of each step during analysis, including sample preparation. For Inorganic analysis.	1 per QC Lot, per analytical method.
Surrogate Spike (<i>organic testing only</i>)	Compounds similar in composition and behaviour to the target analytes but not commonly found in samples.	Matrix interference on a per sample basis.	Surrogates are added to all samples for selected organic analyses.
Filed Quality Control Samples			
Equipment Rinsate	A sample of reagent water used by client in field to rinse the sampling equipment between the decontamination and sampling steps	Equipment decontamination.	as directed by client.
Trip Blank (<i>usually VOC testing</i>)	A sample of analyte free media is taken from the laboratory to the sampling site and returned to the laboratory unopened.	Contamination from shipping and field handling. Most applicable to volatile analysis.	as directed by client.



QUALITY ASSURANCE & QUALITY CONTROL

TABLE 2: LABORATORY QUALITY CONTROL SCHEDULES

ORGANICS –

QUALITY CONTROL ITEM	QCS2	QCS3	QCS4
Laboratory Blank	√	√	√
Batch Duplicate	√	√	√
Matrix Spike (MS)	•	√	√
Single Control Sample (SCS)	√	√	√
Duplicate Control Sample (DCS)	•	•	√
Surrogate (<i>organics only</i>)	√	√	√
Matrix Spike Duplicate (MSD)	•	•	√

INORGANICS -

QUALITY CONTROL ITEM	QCS2	QCS3	QCS4
Laboratory Blank	√	√	√
Batch Duplicate	√	√	√
Matrix Spike (MS)	√	√	√
Single Control Sample (SCS)	√	√	√
Duplicate Control Sample (DCS)	•	•	√
Matrix Spike Duplicate (MSD)	•	•	√

- √ Analysis performed in the schedule.
- Analysis not performed in the schedule.

**APPENDIX K
SUMMARY OF EXCEEDANCE**

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O - Lam Tin Tunnel –
Design and Construction

Appendix K – Summary of Exceedance

Reporting Period: December 2021

(A) Exceedance Report for Air Quality

No limit level exceedance for air quality monitoring of 24-hr TSP was recorded in the reporting month.

No action level exceedance for air quality monitoring of 24-hr TSP was recorded in the reporting month.

No exceedance for air quality monitoring of 1-hr TSP was recorded in the reporting month.

(B) Exceedance Report for Construction Noise

Action Level for Construction Noise

Eight (8) action level exceedances were recorded due to the documented complaints received in this reporting month.

Limit Level for Construction Noise

No limit level exceedance for daytime construction noise monitoring was recorded in the reporting month.

No exceedance for evening-time construction noise monitoring was recorded in the reporting month.

No exceedances for nighttime construction noise monitoring was recorded in the reporting month.

Exceedance recorded during daytime

(NIL in the reporting month)

Exceedance recorded during night-time

(NIL in the reporting month)

(C) Exceedance Report for Water Quality

Twenty (20) Action Level and forty-six (46) Limit Level exceedances were recorded in Monitoring Stations (M) during marine water quality monitoring.

No action and limit level exceedance was recorded for post-reclamation marine water quality monitoring.

Refer to the attached notifications and investigation report for details.

Since October 2019, groundwater monitoring had been suspended.

(D) Exceedance Report for Ecology

(NIL in the reporting month)

(E) Exceedance Report for Cultural Heritage

(NIL in the reporting month)

(F) Exceedance Report for Landfill Gas

(NIL in the reporting month)

- Notification of Exceedance

Date of Water Quality Monitoring:

01 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	6.0	G2	9:24	6.0	6.9	7.2	7.8	6.2
Mid-Ebb	C2	surface	6.0	G3	9:39	6.0	6.9	7.2	7.8	<u>7.1</u>
Mid-Ebb	C2	surface	6.0	G4	9:46	6.0	6.9	7.2	7.8	6.5
Mid-Ebb	C2	surface	6.0	M4	9:14	6.2	7.4	7.2	7.8	6.7
Mid-Ebb	C2	bottom	4.3	G3	9:39	6.9	7.9	5.1	5.5	<u>6.2</u>
Mid-Ebb	C2	bottom	4.3	G4	9:46	6.9	7.9	5.1	5.5	<u>5.6</u>
Mid-Ebb	C2	bottom	4.3	M1	9:30	6.9	7.9	5.1	5.5	5.5
Mid-Ebb	C2	bottom	4.3	M2	9:19	6.9	7.9	5.1	5.5	7.0
Mid-Ebb	C2	bottom	4.3	M4	9:14	6.9	7.9	5.1	5.5	<u>5.6</u>
Mid-Ebb	C2	bottom	4.3	M5	9:55	6.9	7.9	5.1	5.5	<u>6.1</u>
Mid-Flood	C1	surface	5.9	G1	15:01	6.0	6.9	7.1	7.7	<u>7.8</u>
Mid-Flood	C1	surface	5.9	G2	14:52	6.0	6.9	7.1	7.7	6.7
Mid-Flood	C1	surface	5.9	G3	15:05	6.0	6.9	7.1	7.7	6.3
Mid-Flood	C1	surface	5.9	G4	15:14	6.0	6.9	7.1	7.7	<u>8.7</u>
Mid-Flood	C1	bottom	7.7	G3	15:05	6.9	7.9	9.2	9.9	7.3
Mid-Flood	C1	bottom	7.7	M1	14:57	6.9	7.9	9.2	9.9	7.3
Mid-Flood	C1	bottom	7.7	M3	15:09	6.9	7.9	9.2	9.9	<u>8.2</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic***)

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 - Notification of Exceedance

Date of Water Quality Monitoring: 01 December 2021

Part A – Exceedance Summary Tables

Table II: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	3.1	G2	9:24	3.7	4.0	4.0
Bottom	19.3	22.2	Mid-Ebb	C2	3.1	G4	9:46	3.7	4.0	<u>4.6</u>
Bottom	19.3	22.2	Mid-Ebb	C2	3.1	M5	9:55	3.7	4.0	<u>4.4</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

- Notification of Exceedance

Date of Water Quality Monitoring:

03 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / ~~Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	3.9	G4	11:17	6.0	6.9	4.6	5.0	<u>5.3</u>
Mid-Ebb	C2	surface	3.9	M5	11:26	8.0	7.4	4.6	5.0	4.8
Mid-Ebb	C2	bottom	3.9	M4	10:49	6.9	7.9	4.7	5.1	4.8
Mid-Flood	C1	surface	3.7	G3	16:02	6.0	6.9	4.4	4.7	6.2
Mid-Flood	C1	surface	3.7	M1	15:56	6.2	7.4	4.4	4.7	7.0
Mid-Flood	C1	surface	3.7	M2	15:45	6.2	7.4	4.4	4.7	<u>5.6</u>
Mid-Flood	C1	surface	3.7	M3	16:05	6.2	7.4	4.4	4.7	4.6
Mid-Flood	C1	surface	3.7	M5	16:17	6.2	7.4	4.4	4.7	<u>5.4</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

- Notification of Exceedance

Date of Water Quality Monitoring:

03 December 2021

Part A – Exceedance Summary Tables

Table II: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-flood	C1	2.3	G1	15:58	2.8	3.0	<u>4.1</u>
Bottom	19.3	22.2	Mid-flood	C1	2.3	G2	15:52	2.8	3.0	<u>4.0</u>
Bottom	19.3	22.2	Mid-flood	C1	2.3	M2	15:45	2.8	3.0	<u>3.2</u>
Bottom	19.3	22.2	Mid-flood	C1	2.3	M5	16:17	2.8	3.0	<u>3.2</u>

Note:

Bold means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

- Notification of Exceedance

Date of Water Quality Monitoring:

06 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	5.8	G1	8:11	6.0	6.9	7.0	7.5	6.3
Mid-Ebb	C2	surface	5.8	G3	8:14	6.0	6.9	7.0	7.5	<u>7.1</u>
Mid-Flood	C1	bottom	5.2	G2	13:23	6.9	7.9	6.2	6.7	6.4
Mid-Flood	C1	bottom	5.2	G4	13:51	6.9	7.9	6.2	6.7	6.4
Mid-Flood	C1	bottom	5.2	M3	13:47	6.9	7.9	6.2	6.7	7.6

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

- Notification of Exceedance

Date of Water Quality Monitoring:

06 December 2021

Part A – Exceedance Summary Tables

Table II: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	2.0	G1	8:11	2.4	2.6	<u>3.0</u>
Bottom	19.3	22.2	Mid-Ebb	C2	2.0	G2	8:02	2.4	2.6	<u>3.4</u>
Bottom	19.3	22.2	Mid-Ebb	C2	2.0	G3	8:14	2.4	2.6	<u>3.2</u>
Bottom	19.3	22.2	Mid-Ebb	C2	2.0	G4	8:26	2.4	2.6	<u>2.9</u>
Bottom	19.3	22.2	Mid-Ebb	C2	2.0	M1	8:06	2.4	2.6	<u>3.1</u>
Bottom	19.3	22.2	Mid-Ebb	C2	2.0	M2	7:58	2.4	2.6	<u>3.2</u>
Bottom	19.3	22.2	Mid-Ebb	C2	2.0	M3	8:21	2.4	2.6	<u>3.6</u>
Bottom	19.3	22.2	Mid-flood	C1	2.0	G1	13:34	2.4	2.6	<u>3.0</u>
Bottom	19.3	22.2	Mid-flood	C1	2.0	G2	13:23	2.4	2.6	<u>3.4</u>
Bottom	19.3	22.2	Mid-flood	C1	2.0	G3	13:39	2.4	2.6	<u>3.2</u>
Bottom	19.3	22.2	Mid-flood	C1	2.0	G4	13:51	2.4	2.6	<u>2.9</u>
Bottom	19.3	22.2	Mid-flood	C1	2.0	M1	13:29	2.4	2.6	<u>3.1</u>
Bottom	19.3	22.2	Mid-flood	C1	2.0	M2	13:19	2.4	2.6	<u>3.2</u>
Bottom	19.3	22.2	Mid-flood	C1	2.0	M3	13:47	2.4	2.6	<u>3.6</u>
Note:	<i>Bold</i> means Action Level exceedance of Control (Re				0.0					#N/A
	<i>Bold with underline</i> means Limit Level exceedance				0.0					#N/A

- Notification of Exceedance

Date of Water Quality Monitoring:

08 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / ~~Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	bottom	3.0	G3	10:31	6.9	7.9	3.5	3.8	3.6
Mid-Ebb	C2	bottom	3.0	M3	10:40	6.9	7.9	3.5	3.8	<u>4.8</u>
Mid-Ebb	C2	bottom	3.0	M5	11:05	6.9	7.9	3.5	3.8	<u>4.9</u>
Mid-Flood	C1	surface	5.7	G2	15:07	6.0	6.9	6.8	7.4	6.6

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Have you checked the treated data in the summary table ? Do they make sense, are there unexpected small or large numbers ?

1. Generate PDF & Html for the summary table of daily MWQM data (water daily), if no data for a tide is recorded, please remove the corresponding sections and insert a remark at the bottom before
2. Count Exceedance for the actions and limit levels for both SS and Turbidity;
Auto input the counts into the "Exceedance Count.xlsx" in the same folder, therefore NEVER change the name of the file, you may run this in your own desktop, but rmb to carry the "Exceedance" to the project folder for other ppl's use.
-Auto filter rows with action and limit levels in NOE and generate the respective NOE

After running both program, please double check the generated docs for accuracy, presentation and etc. and place the docs into designated locations for other uses

- Notification of Exceedance

Date of Water Quality Monitoring:

13 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / ~~Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	1.9	G2	8:17	6.0	6.9	2.2	2.4	<u>2.6</u>
Mid-Ebb	C2	surface	1.9	G3	8:37	6.0	6.9	2.2	2.4	<u>2.6</u>
Mid-Ebb	C2	surface	1.9	G4	8:52	6.0	6.9	2.2	2.4	2.4
Mid-Ebb	C2	surface	1.9	M2	8:09	6.2	7.4	2.2	2.4	2.3
Mid-Ebb	C2	surface	1.9	M3	8:44	6.2	7.4	2.2	2.4	<u>3.3</u>
Mid-Ebb	C2	surface	1.9	M4	8:08	6.2	7.4	2.2	2.4	<u>3.1</u>
Mid-Ebb	C2	bottom	2.6	G4	8:52	6.9	7.9	3.1	3.4	<u>3.5</u>
Mid-Flood	C1	surface	2.9	G1	14:47	6.0	6.9	3.4	3.7	<u>4.0</u>
Mid-Flood	C1	bottom	2.7	G3	14:55	6.9	7.9	3.2	3.5	3.4
Mid-Flood	C1	bottom	2.7	M5	15:28	6.9	7.9	3.2	3.5	<u>4.6</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 - Notification of Exceedance

Date of Water Quality Monitoring: 13 December 2021

Part A – Exceedance Summary Tables

Table II: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	2.6	M4	8:08	3.1	3.4	3.3

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

- Notification of Exceedance

Date of Water Quality Monitoring:

15 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / ~~Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	3.2	G3	9:45	6.0	6.9	3.8	4.2	4.1
Mid-Ebb	C2	surface	3.2	M4	9:09	6.2	7.4	3.8	4.2	4.0
Mid-Ebb	C2	bottom	2.5	G2	9:22	6.9	7.9	2.9	3.2	3.2
Mid-Ebb	C2	bottom	2.5	G3	9:45	6.9	7.9	2.9	3.2	<u>3.4</u>
Mid-Ebb	C2	bottom	2.5	M3	9:53	6.9	7.9	2.9	3.2	<u>3.7</u>
Mid-Flood	C1	surface	2.2	G2	15:32	6.0	6.9	2.6	2.9	<u>3.2</u>
Mid-Flood	C1	surface	2.2	G3	15:55	6.0	6.9	2.6	2.9	<u>3.0</u>
Mid-Flood	C1	surface	2.2	G4	16:08	6.0	6.9	2.6	2.9	<u>3.7</u>
Mid-Flood	C1	surface	2.2	M2	15:25	6.2	7.4	2.6	2.9	<u>3.3</u>
Mid-Flood	C1	surface	2.2	M5	16:43	6.2	7.4	2.6	2.9	<u>3.0</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (***Italic***)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (***Italic***)

- Notification of Exceedance

Date of Water Quality Monitoring:

17 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	2.8	G1	16:55	6.0	6.9	3.3	3.6	3.4
Mid-Ebb	C2	surface	2.8	G2	16:35	6.0	6.9	3.3	3.6	<u>4.1</u>
Mid-Ebb	C2	surface	2.8	G3	17:03	6.0	6.9	3.3	3.6	<u>4.0</u>
Mid-Ebb	C2	surface	2.8	G4	17:17	6.0	6.9	3.3	3.6	<u>4.3</u>
Mid-Ebb	C2	surface	2.8	M1	16:43	6.2	7.4	3.3	3.6	3.5
Mid-Ebb	C2	surface	2.8	M3	17:11	6.2	7.4	3.3	3.6	<u>4.4</u>
Mid-Ebb	C2	surface	2.8	M5	17:37	8.0	7.4	3.3	3.6	<u>3.7</u>
Mid-Flood	C1	bottom	3.8	M1	10:45	6.9	7.9	4.6	4.9	<u>5.2</u>
Mid-Flood	C1	bottom	3.8	M2	10:30	6.9	7.9	4.6	4.9	4.9

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 - Notification of Exceedance

Date of Water Quality Monitoring: 20 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / ~~Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	bottom	3.5	G1	12:33	6.9	7.9	4.2	4.6	6.0
Mid-Ebb	C2	bottom	3.5	G2	12:13	6.9	7.9	4.2	4.6	<u>4.7</u>
Mid-Ebb	C2	bottom	3.5	G3	12:41	6.9	7.9	4.2	4.6	<u>5.4</u>
Mid-Flood	C1	surface	3.1	M2	7:44	6.2	7.4	3.7	4.0	3.8

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 - Notification of Exceedance

Date of Water Quality Monitoring: 20 December 2021

Part A – Exceedance Summary Tables

Table II: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	2.6	M5	13:27	3.1	3.4	<u>4.6</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

- Notification of Exceedance

Date of Water Quality Monitoring:

22 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / ~~Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	surface	3.8	M5	14:32	8.0	7.4	4.6	4.9	4.8
Mid-Ebb	C2	bottom	2.8	G2	14:00	6.9	7.9	3.4	3.6	<u>5.2</u>
Mid-Ebb	C2	bottom	2.8	G4	14:23	6.9	7.9	3.4	3.6	3.6
Mid-Ebb	C2	bottom	2.8	M1	14:06	6.9	7.9	3.4	3.6	<u>4.5</u>
Mid-Ebb	C2	bottom	2.8	M2	13:54	6.9	7.9	3.4	3.6	<u>4.3</u>
Mid-Ebb	C2	bottom	2.8	M3	14:19	6.9	7.9	3.4	3.6	3.6
Mid-Ebb	C2	bottom	2.8	M5	14:32	6.9	7.9	3.4	3.6	3.6
Mid-Flood	C1	surface	4.0	M2	8:43	6.2	7.4	4.7	5.1	<u>5.5</u>
Mid-Flood	C1	surface	4.0	M5	9:21	6.2	7.4	4.7	5.1	4.8
Mid-Flood	C1	bottom	3.0	G1	9:00	6.9	7.9	3.6	3.9	<u>4.1</u>
Mid-Flood	C1	bottom	3.0	G2	8:49	6.9	7.9	3.6	3.9	3.7
Mid-Flood	C1	bottom	3.0	M3	9:07	6.9	7.9	3.6	3.9	<u>4.7</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Agreement No. CE 59/2015(EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel Design and Construction
 - Notification of Exceedance

Date of Water Quality Monitoring: 22 December 2021

Part A – Exceedance Summary Tables

Table II: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	1.4	G1	14:11	1.7	1.8	<u>2.5</u>
Bottom	19.3	22.2	Mid-Ebb	C2	1.4	G2	14:00	1.7	1.8	<u>2.1</u>
Bottom	19.3	22.2	Mid-Ebb	C2	1.4	G3	14:15	1.7	1.8	<u>2.0</u>
Bottom	19.3	22.2	Mid-Ebb	C2	1.4	G4	14:23	1.7	1.8	<u>2.0</u>
Bottom	19.3	22.2	Mid-Ebb	C2	1.4	M2	13:54	1.7	1.8	<u>2.3</u>
Bottom	19.3	22.2	Mid-Ebb	C2	1.4	M3	14:19	1.7	1.8	<u>2.1</u>
Bottom	19.3	22.2	Mid-Ebb	C2	1.4	M4	13:49	1.7	1.8	<u>2.5</u>
Bottom	19.3	22.2	Mid-Ebb	C2	1.4	M5	14:32	1.7	1.8	<u>2.6</u>
Bottom	19.3	22.2	Mid-flood	C1	1.9	G1	9:00	2.2	2.4	2.4
Bottom	19.3	22.2	Mid-flood	C1	1.9	M2	8:43	2.2	2.4	2.3
Bottom	19.3	22.2	Mid-flood	C1	1.9	M4	8:37	2.2	2.4	<u>2.5</u>
Bottom	19.3	22.2	Mid-flood	C1	1.9	M5	9:21	2.2	2.4	<u>2.5</u>

Note: **Bold** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

- Notification of Exceedance

Date of Water Quality Monitoring:

24 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / ~~Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	bottom	3.4	G1	14:48	6.9	7.9	4.0	4.4	4.1
Mid-Ebb	C2	bottom	3.4	G2	14:28	6.9	7.9	4.0	4.4	<u>5.9</u>
Mid-Ebb	C2	bottom	3.4	G3	14:55	6.9	7.9	4.0	4.4	<u>4.7</u>
Mid-Ebb	C2	bottom	3.4	M5	15:45	6.9	7.9	4.0	4.4	<u>6.3</u>
Mid-Flood	C1	surface	4.4	G1	10:54	6.0	6.9	5.3	5.7	5.5
Mid-Flood	C1	bottom	3.5	M5	11:36	6.9	7.9	4.2	4.6	4.4

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Date of Water Quality Monitoring: **29 December 2021**

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / ~~Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Ebb	C2	bottom	2.2	M4	13:43	6.9	7.9	2.6	2.9	2.8
Mid-Flood	C1	surface	2.0	G2	8:21	6.0	6.9	2.4	2.6	<u>2.7</u>
Mid-Flood	C1	surface	2.0	G3	8:36	6.0	6.9	2.4	2.6	2.5
Mid-Flood	C1	surface	2.0	M2	8:15	6.2	7.4	2.4	2.6	<u>2.8</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)
Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

- Notification of Exceedance

Date of Water Quality Monitoring:

29 December 2021

Part A – Exceedance Summary Tables

Table II: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / Turbidity (TURB) / ~~Suspended Solids (SS)~~

Depth	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Tide	Control Station(s)	Measured Value at Control Station (NTU)	Station(s)	Time (hrs)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Measured Value (NTU)
Bottom	19.3	22.2	Mid-Ebb	C2	1.7	G4	14:13	2.0	2.2	2.1
Bottom	19.3	22.2	Mid-Ebb	C2	1.7	M1	13:59	2.0	2.2	<u>3.3</u>
Bottom	19.3	22.2	Mid-Ebb	C2	1.7	M2	13:51	2.0	2.2	<u>2.3</u>
Bottom	19.3	22.2	Mid-Ebb	C2	1.7	M3	14:09	2.0	2.2	2.1
Bottom	19.3	22.2	Mid-Ebb	C2	1.7	M4	13:43	2.0	2.2	<u>8.5</u>
Bottom	19.3	22.2	Mid-flood	C1	1.9	G1	8:32	2.3	2.5	<u>2.7</u>
Bottom	19.3	22.2	Mid-flood	C1	1.9	M1	8:27	2.3	2.5	<u>2.8</u>
Bottom	19.3	22.2	Mid-flood	C1	1.9	M3	8:39	2.3	2.5	<u>3.3</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

- Notification of Exceedance

Date of Water Quality Monitoring:

31 December 2021

Part A – Exceedance Summary Tables

Table I: Parameter(s) – ~~Dissolved Oxygen (DO)~~ / ~~Turbidity (TURB)~~ / Suspended Solids (SS)

Tide	Control Station(s)	Depth	Measured Value at Control Station (mg/L)	Station(s)	Time (hrs)	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Measured Value (mg/L)
Mid-Flood	C1	surface	3.9	G1	15:25	6.0	6.9	4.6	5.0	<u>5.2</u>
Mid-Flood	C1	surface	3.9	G3	15:33	6.0	6.9	4.6	5.0	<u>5.4</u>
Mid-Flood	C1	surface	3.9	G4	15:47	6.0	6.9	4.6	5.0	<u>8.4</u>

Note: ***Bold*** means Action Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Bold with underline means Limit Level exceedance of Control (**Regular**) & Baseline (*Italic*)

Contract No. CE 59/2015 (EP)

**Environmental Team for Tseung Kwan O – Lam Tin Tunnel
Design and Construction**

- Investigation Report of Environmental Quality Limit Exceedances

Part A Details of Investigation

For the reporting month, exceedances for suspended solids and turbidity have been recorded continuously at various monitoring stations. During site inspection, the water outside the site boundary seemed to be clear and clean (Photo 1 to 4)

During regular water quality monitoring, the sea appears to be clear (Photo 5 to 6). The sediment tank was free from silt and sediments and the drainage system remained well-maintained. No sand plumes were observed during the site inspection.

No direct evidence that the recent exceedances were due to the ongoing reclamation activities of the Project. Therefore, no additional marine water quality monitoring is required.

Contract No. CE 59/2015 (EP)

**Environmental Team for Tseung Kwan O – Lam Tin Tunnel
Design and Construction**

- Investigation Report of Environmental Quality Limit Exceedances

Part B Photo Record



Photo 1 (Recorded on 16 December 2021)



Photo 2 (Recorded on 15 December 2021)



Photo 3 (Recorded on 15 December 2021)



Photo 4 (Recorded on 15 December 2021)

Contract No. CE 59/2015 (EP)

**Environmental Team for Tseung Kwan O – Lam Tin Tunnel
Design and Construction**

- Investigation Report of Environmental Quality Limit Exceedances



Photo 5 (Recorded on 20 December 2021)



Photo 6 (Recorded on 8 December 2021)

Part C – Recommendations

The Contractors are reminded to conduct good site practises to prevent accidental surface runoff discharge. Good site practises such as provision of perimeter cut-off drains to direct off-site water, regular removal of silt and sediment from sediment tanks and covering open stockpiles shall be conducted as far as possible.

Reviewed by: (Environmental Team Leader:(Dr. HF Chan)

Date: 11th January 2021

APPENDIX L
SITE AUDIT SUMMARY

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction

Monthly EM&A Report

Appendix L - Site Audit Summary

Contract No. — NE2015/01

Tseung Kwan O - Lam Tin Tunnel — Main Tunnel and Associated Works

Items	Date	Status*	Follow up Action
<i>Water Quality</i>			
The Contractor is reminded to remove ponding water in drainage system to ensure proper function of the drainage system.	29-Dec-21	#	N.A.
<i>Ecology</i>			
--	--	--	--
<i>Noise</i>			
--	--	--	--
<i>Landscape and Visual</i>			
--	--	--	--
<i>Air Quality</i>			
The open stockpile shall be covered.	24-Nov-21	✓	1-Dec-21: The stockpile was covered
PFA materials shall be covered after used	1-Dec-21	✓	1-Dec-21: The materials are removed.
Observable dust cloud is recored. The Contractor is requested to carry out related mitigation measures immediately.	1-Dec-21 22-Dec-21	✓	1-Dec-21 & 22-Dec-21: The Contractor immediately ordered the workers to water the area.
<i>Waste/Chemical Management</i>			
The Contractor is reminded to provide drip tray for chemicals	24-Nov-21	✓	1-Dec-21: The chemical was removed
The Contractor is reminded to remove oil stain.	24-Nov-21 29-Dec-21	✓ #	1-Dec-21: The oil stain was removed.
The drip tray shall be plugged to ensure its functionality.	15-Dec-21	✓	15-Dec-21: The drip tray was replaced.
The chemical shall be placed in drip tray to avoid accidental leakage.	15-Dec-21	✓	15-Dec-21: The chemical was removed.
The Contractor is reminded to remove chemical.	22-Dec-21	✓	22-Dec-21: The chemical was removed.
The Contractor is reminded to remove accumulated waste.	29-Dec-21	✓	29-Dec-21: The accumulated waste was removed.
<i>Impact on Cultural Heritage</i>			
--	--	--	--
<i>Permit/Licenses</i>			
--	--	--	--

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit

✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit

Follow up action will be reported in next reporting month

* Non-compliance of mitigation measure

• Non-compliance but improved by the contractor

Agreement No. CE 59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
 Monthly EM&A Report

Appendix L - Site Audit Summary

Contract No. — NE2015/02

Tseung Kwan O - Lam Tin Tunnel — Road P2 and Associated Works

Items	Date	Status*	Follow up Action
<i>Water Quality</i>			
--	--	--	--
<i>Ecology</i>			
--	--	--	--
<i>Noise</i>			
<i>Landscape and Visual</i>			
--	--	--	--
<i>Air Quality</i>			
<i>Waste/Chemical Management</i>			
Drip tray shall be provided to chemicals / Chemicals shall be removed.	2-Dec-21	✓	2-Dec-21: The chemicals are removed later at the same day.
<i>Impact on Cultural Heritage</i>			
--	--	--	--
<i>Permit/Licenses</i>			
--	--	--	--

- ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
- ✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
- # Follow up action will be reported in next reporting month
- * Non-compliance of mitigation measure
 - Non-compliance but improved by the contractor

Agreement No. CE 59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
 Monthly EM&A Report

Appendix L - Site Audit Summary

Contract No. — NE2017/02
 Tseung Kwan O - Lam Tin Tunnel — Road P2/D4 and Associated Works

Items	Date	Status*	Follow up Action
<i>Water Quality</i>			
--	--	--	--
<i>Ecology</i>			
--	--	--	--
<i>Noise</i>			
--	--	--	--
<i>Landscape and Visual</i>			
--	--	--	--
<i>Air Quality</i>			
--	--	--	--
<i>Waste/Chemical Management</i>			
--	--	--	--
<i>Impact on Cultural Heritage</i>			
--	--	--	--
<i>Permit/Licenses</i>			
--	--	--	--

- ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
- ✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
- # Follow up action will be reported in next reporting month
- * Non-compliance of mitigation measure
 - Non-compliance but improved by the contractor

Agreement No. CE 59/2015 (EP)

Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction

Monthly EM&A Report

Appendix L - Site Audit Summary

Contract No. — NE2017/06

Tseung Kwan O - Lam Tin Tunnel — Traffic Control and Surveillance System (TCSS) and Associated Works

Items	Date	Status*	Follow up Action
<i>Water Quality</i>			
--	--	--	--
<i>Ecology</i>			
--	--	--	--
<i>Noise</i>			
--	--	--	--
<i>Landscape and Visual</i>			
--	--	--	--
<i>Air Quality</i>			
--	--	--	--
<i>Waste/Chemical Management</i>			
--	--	--	--
<i>Impact on Cultural Heritage</i>			
--	--	--	--
<i>Permit/Licenses</i>			
--	--	--	--

- ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
- ✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
- # Follow up action will be reported in next reporting month
- * Non-compliance of mitigation measure
 - Non-compliance but improved by the contractor

Agreement No. CE 59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
 Monthly EM&A Report

Appendix L - Site Audit Summary

Contract No. — NE2017/01

Tseung Kwan O - Lam Tin Tunnel — Tseung Kwan O Interchange and Associated Works

Items	Date	Status*	Follow up Action
<i>Water Quality</i>			
--	--	--	--
<i>Ecology</i>			
--	--	--	--
<i>Noise</i>			
--	--	--	--
<i>Landscape and Visual</i>			
--	--	--	--
<i>Air Quality</i>			
--	--	--	--
<i>Waste/Chemical Management</i>			
--	--	--	--
<i>Impact on Cultural Heritage</i>			
--	--	--	--
<i>Permit/Licenses</i>			
--	--	--	--

- ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
- ✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
- # Follow up action will be reported in next reporting month
- * Non-compliance of mitigation measure
 - Non-compliance but improved by the contractor

Agreement No. CE 59/2015 (EP)
 Environmental Team for Tseung Kwan O - Lam Tin Tunnel - Design and Construction
 Monthly EM&A Report

Appendix L - Site Audit Summary

Contract No. — NE2017/07

Tseung Kwan O - Lam Tin Tunnel — Cross Bay Link Main Bridge and Associated Works

Items	Date	Status*	Follow up Action
<i>Water Quality</i>			
--	--	--	--
<i>Ecology</i>			
--	--	--	--
<i>Noise</i>			
--	--	--	--
<i>Landscape and Visual</i>			
--	--	--	--
<i>Air Quality</i>			
--	--	--	--
<i>Waste/Chemical Management</i>			
--	--	--	--
<i>Impact on Cultural Heritage</i>			
--	--	--	--
<i>Permit/Licenses</i>			
--	--	--	--

- ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
- ✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
- # Follow up action will be reported in next reporting month
- * Non-compliance of mitigation measure
 - Non-compliance but improved by the contractor

**APPENDIX M
EVENT AND ACTION PLANS**

Event and Action Plan for Air Quality (Dust)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of complaint and propose remedial measures; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial actions to IEC within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	8. If exceedance stops, cease additional monitoring.			
Limit level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform Contractor ,IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals;

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	5. Carry out analysis of Contractor’s working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor’s remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	3. Supervise the implementation of remedial measures.	4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.			

Event and Action Plan for Marine Water Quality

Event	Action			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day at water sensitive receiver(s)	<ul style="list-style-type: none"> Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; If exceedance is found to be caused by the reclamation activities, repeat <i>in-situ</i> measurement to confirm findings; Inform IEC and contractor; Check monitoring data, all plant, equipment and Contractor's working methods; If exceedance occurs at WSD salt water intake, inform WSD; Discuss mitigation measures with IEC and Contractor; Repeat measurement on next day of exceedance. 	<ul style="list-style-type: none"> Discuss with ET and Contractor on the mitigation measures; Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation proposal. 	<ul style="list-style-type: none"> Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Amend working methods if appropriate; Discuss with ET and IEC and propose mitigation measures to IEC and ER; Implement the agree mitigation measures.
Action level being exceeded by two or more consecutive	<ul style="list-style-type: none"> Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; 	<ul style="list-style-type: none"> Discuss with ET and Contractor on the mitigation measures; 	<ul style="list-style-type: none"> Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation proposal; 	<ul style="list-style-type: none"> Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice;

Event	Action			
	ET	IEC	ER	CONTRACTOR
sampling days at water sensitive receiver(s)	<ul style="list-style-type: none"> • If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • Inform IEC and contractor; • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IEC and Contractor; • Ensure mitigation measures are implemented; • Prepare to increase the monitoring frequency to daily; • If exceedance occurs at WSD salt water intake, inform WSD; • Repeat measurement on next day of exceedance. 	<ul style="list-style-type: none"> • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; • Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day at water sensitive receiver(s)	<ul style="list-style-type: none"> • Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; 	<ul style="list-style-type: none"> • Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; 	<ul style="list-style-type: none"> • Discuss with IEC, ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods; 	<ul style="list-style-type: none"> • Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	IEC	ER	CONTRACTOR
	<ul style="list-style-type: none"> • If exceedance is found to be caused by the reclamation activities, repeat <i>in-situ</i> measurement to confirm findings; • Inform IEC, contractor, AFCD and EPD • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IEC, ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level; • If exceedance occurs at WSD salt water intake, inform WSD. 	<ul style="list-style-type: none"> • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • Check all plant and equipment and consider changes of working methods; • Discuss with ET, IEC and ER and submit proposal of mitigation measures to IEC and ER within 3 working days of notification; • Implement the agreed mitigation measures.
Limit level being exceeded by two or more consecutive sampling days at	<ul style="list-style-type: none"> • Identify the source(s) of impact by comparing the results with those collected at the control stations as appropriate; 	<ul style="list-style-type: none"> • Discuss with ET and Contractor on the mitigation measures; • Review proposal on mitigation measures submitted by Contractor and advise the ER accordingly; 	<ul style="list-style-type: none"> • Discuss with IC(E), ET and Contractor on the proposed mitigation measures; • Request Contractor to critically review the working methods; 	<ul style="list-style-type: none"> • Inform the ER and confirm notification of the non-compliance in writing; • Rectify unacceptable practice;

Event	Action			
	ET	IEC	ER	CONTRACTOR
water sensitive receiver(s)	<ul style="list-style-type: none"> • If exceedance is found to be caused by the reclamation activities, repeat in-situ measurement to confirm findings; • Inform IC(E), AFCD, contractor and EPD; • Check monitoring data, all plant, equipment and Contractor's working methods; • Discuss mitigation measures with IC(E), ER and Contractor; • Ensure mitigation measures are implemented; • Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days; • If exceedance occurs at WSD salt water intake, inform WSD. 	<ul style="list-style-type: none"> • Assess the effectiveness of the implemented mitigation measures. 	<ul style="list-style-type: none"> • Make agreement on the mitigation measures to be implemented; • Assess the effectiveness of the implemented mitigation measures; • Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level. 	<ul style="list-style-type: none"> • Check all plant and equipment and consider changes of working methods; • Discuss with ET, IC(E) and ER and submit proposal of mitigation measures to IC(E) and ER within 3 working days of notification; • Implement the agreed mitigation measures; • As directed by the Engineer, to slow down or to stop all or part of the construction activities.

Limit Levels and Action Plan for Landfill Gas

Parameter	Limit Level	Action
Oxygen	<19%	<ul style="list-style-type: none"> • Ventilate to restore oxygen to >19%
	<18%	<ul style="list-style-type: none"> • Stop works • Evacuate personnel/prohibit entry • Increase ventilation to restore oxygen to >19%
Methane	>10% LEL (i.e. > 0.5% by volume)	<ul style="list-style-type: none"> • Prohibit hot works • Ventilate to restore methane to <10% LEL
	>20% LEL (i.e. > 1% by volume)	<ul style="list-style-type: none"> • Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore methane to <10% LEL
Carbon Dioxide	>0.5%	<ul style="list-style-type: none"> • Ventilate to restore carbon dioxide to < 0.5%
	>1.5%	<ul style="list-style-type: none"> • Stop works • Evacuate personnel / prohibit entry • Increase ventilation to restore carbon dioxide to < 0.5%

Event and Action Plan for Coral Post-Translocation Monitoring

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level Exceedance	1. Check monitoring data; 2. Inform the IEC, ER and Contractor of the findings; 3. Increase the monitoring to at least once a month to confirm findings; 4. Propose mitigation measures for consideration	1. Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional Monitoring and any other measures submitted by the Contractor and advise the ER accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures.
Limit Level Exceedance	Undertake Steps 1-4 as in the Action Level Exceedance. If further exceedance of Limit Level, suspend construction works until an effective solution is identified.	1. Discuss monitoring with the ET and the Contractor; 2. Review proposals for additional Monitoring and any other measures submitted by the Contractor and advise the ER accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make agreement on the measures to be implemented.	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the ER; 3. Implement the agreed measures.

Mitigation Measures for Vibration Monitoring

Level	Contingency Action
Alert Level	<ul style="list-style-type: none"> ● The Engineer shall be informed immediately. ● The Contractor shall submit an investigation report to describe works being undertaken. To review the instrument responses and to study the cause of undue response. ● The Contractor shall review and increase the instrumentation monitoring and reporting frequency, if applicable. ● The Contractor shall submit a detailed plan of action describing the measures to be taken should the concerned instrument reach the action level to the Engineer for approval.
Alarm Level	<ul style="list-style-type: none"> ● The Engineer shall be informed immediately. ● The active construction works may require to be suspended subject to the Engineer's review of monitoring data. ● The Contractor shall immediately implement the measures as defined in the detailed plan of action to prevent further ground movement and groundwater drawdown etc. ● The Contractor shall prepare a detailed investigation report to study the cause of the exceedance ● The Contractor shall propose a contingency plan for the Engineer's approval in the event that alarm value is reached or exceeded ● The Contractor shall develop an emergency plan for the Engineer's approval in the event the applied contingency measures cannot control the situation. ● The Contractor shall meet the Engineer to discuss the instrument response and review the effectiveness of the implemented measures. ● The Contractor shall carry out design review of the works

Action Level	<ul style="list-style-type: none">● Consideration shall be given to suspend all active construction works and the Engineer shall be informed immediately● The Contractor shall immediately implement the measures defined in the contingency plan● The Contractor shall implement the measures defined in the emergency plan in the event that the applied contingency measures are found inadequate● The Contractor shall provide a complete report to examine the construction method and review the response of the instruments with full history of the monitoring data and construction activities and necessary design update● To resume the suspended activities, the Contractor shall demonstrate to the Engineer's satisfaction that it is safe to do so with approval from the Engineer.
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**APPENDIX N
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

App N1 - IMPLEMENTATION SCHEDULE AND RECOMMENDED MITIGATION MEASURES

Table I - Recommended Mitigation Measures stipulated in EM&A Manual for the Project

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
Air Quality						
S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	To minimize the dust impact	Contractor	All Active Work Sites	Construction phase	APCO
S3.8.1	Enclosing the unloading process at barging point by a 3-sided screen with top tipping hall / mixing area in Work Area A, provision of water spraying and flexible dust curtains	To minimize the dust impact	Contractor	Barging Points	Construction phase	APCO
S3.8.7	Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	To minimize the dust impact	Contractor	All Construction Work Sites	Construction phase	APCO and Air Pollution Control (Construction Dust) Regulation
S3.8.7	<ul style="list-style-type: none"> Use of frequent watering for particularly dusty construction areas and areas close to ASRs.. 					
S3.8.7	<ul style="list-style-type: none"> Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. 					
S3.8.7	<ul style="list-style-type: none"> Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. 					
S3.8.7	<ul style="list-style-type: none"> Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. 					
S3.8.7	<ul style="list-style-type: none"> Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. 					
S3.8.7	<ul style="list-style-type: none"> Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. 					
S3.8.7	<ul style="list-style-type: none"> Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. 					
S3.8.7	<ul style="list-style-type: none"> Imposition of speed controls for vehicles on site haul roads. 					
S3.8.7	<ul style="list-style-type: none"> Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs 					
S3.8.7	<ul style="list-style-type: none"> Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. 					
S3.8.7	<ul style="list-style-type: none"> Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise. 					
/	<p>Emission from Vehicles and Plants</p> <ul style="list-style-type: none"> All vehicles shall be shut down in intermittent use. Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke. All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD) 	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	APCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
/	Valid No-road Mobile Machinery (NRMM) labels should be provided to regulated machines	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	APCO
Noise Impact (Construction Phase)						
S4.8	<ul style="list-style-type: none"> Use of quiet PME. Use of movable noise barriers for Excavator, Lorry, Dump Truck, Mobile Crane, Compactor, Concrete Mixer Truck, Concrete Lorry Mixer, Breaker, Mobile Crusher, Backhoe, Vibratory Poker, Saw, Asphalt Paver, Vibratory Roller, Vibrolance, Hydraulic Vibratory Lance and Piling (Vibration Hammer). Use of full enclosure for Air Compressor, Compressor, Bar Bender, Generator, Drilling Rig, Chisel, Large Diameter Bore Piling, Grout Mixer & Pump and Concrete Pump. 	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO
Noise Mitigation Plan	Use of Temporary Noise Barriers (i.e Acoustic box, SilentUp and etc.) or Full Enclosure for PME according to the approved Noise Mitigation Plan	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO
S4.9	Good Site Practice	To minimize construction noise impact arising from the Project at the affected NSRs	Project Proponent	Work sites	Construction Period	EIAO-TM, NCO
S4.9	<ul style="list-style-type: none"> Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program 					
S4.9	<ul style="list-style-type: none"> Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. 					
S4.9	<ul style="list-style-type: none"> Mobile plant, if any, should be sited as far away from NSRs as possible. 					
S4.9	<ul style="list-style-type: none"> Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. 					
S4.9	<ul style="list-style-type: none"> Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. 					
S4.9	<ul style="list-style-type: none"> Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities. 					
S4.9	Scheduling of Construction Works during School Examination Period	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work site near school	Construction phase	EIAO-TM, NCO
Water Quality Impact (Construction Phase)						
S5.6.24	The dry density of filling material for the TKO-LT Tunnel reclamation should be 1,900kg/m ³ , with fine content of 25% or less.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.1	Non-dredged method by constructing steel cellular caisson structure with stone column shall be adopted for construction of seawall foundation. During the stone column installation (also including the installation of steel cellular caisson), silt curtain shall be employed around the active stone column installation points.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.2	Formation of seawall enclosing the reclamation for Road P2 (notwithstanding an opening of about 50m for marine access) shall be completed prior to the filling activities. The seawall opening of about 50m wide for marine access shall be selected at a location as indicatively shown in Appendix 5.10. No more than 3 filling barge trips per day shall be made with a maximum daily rate of 3,000m ³ (i.e. 1,000 m ³ per trip) for the filling operation at the reclamation area for Road P2. All filling works shall be carried out behind the seawall with the use of single silt curtain at the marine access.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
Silt Curtain Deployment Plan	<ul style="list-style-type: none"> Silt curtains should be deployed properly to surround the works area. 	Control potential impacts from marine works	Contractor	NE/2015/01	Construction stage	EIAO
Silt Curtain Deployment Plan	<ul style="list-style-type: none"> Maintenance of silt curtain should be provided. 					
Silt Curtain Deployment Plan	<ul style="list-style-type: none"> Sufficient stock of silt curtain should be provided on site. 					
S5.8.3	Other good site practices should be undertaken during filling operations include:	Control potential impacts from filling activities and marine-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, Waste Disposal Ordinance (WDO)
S5.8.3	<ul style="list-style-type: none"> all marine works should adopt the environmental friendly construction methods as far as practically possible including the use of cofferdams to cover the construction area to separate the construction works from the sea; 					
S5.8.3	<ul style="list-style-type: none"> floating single silt curtain shall be employed for all marine works; 					
S5.8.3	<ul style="list-style-type: none"> all vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; 					
S5.8.3	<ul style="list-style-type: none"> all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; 					
S5.8.3	<ul style="list-style-type: none"> excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved; 					
S5.8.3	<ul style="list-style-type: none"> adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action; 					
S5.8.3	<ul style="list-style-type: none"> loading of barges and hoppers should be controlled to prevent splashing of filling material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation; 					
S5.8.3	<ul style="list-style-type: none"> any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes; 					
S5.8.3	<ul style="list-style-type: none"> construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds; and 					
S5.8.3	<ul style="list-style-type: none"> before commencement of the reclamation works, the holder of Environmental Permit has to submit plans showing the phased construction of the reclamation, design and operation of the silt curtain. 					
S5.8.4	Site specific mitigation plan for reclamation areas using public fill materials should be submitted for EPD agreement before commencement of construction phase with due consideration of good site practices.	Control potential impacts from filling activities and marine based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
ERR S5.6.1	<p>To minimize water quality impact arising from the dredging and filling works for Reclamation for Road P2, the following mitigation measures shall be implemented:</p> <ul style="list-style-type: none"> - Before carrying out any dredging and underwater filling works, a temporary barrier shall first be constructed to a height above the high water mark to completely enclose the works site (without any opening at the barrier wall) - The temporary barrier fully enclosing the dredging and underwater filling works site shall not be removed before completion of all dredging and underwater filling works. - Water quality sampling and testing shall be carried out to demonstrate that the water quality inside the enclosed barrier is comparable to the ambient or baseline levels prior to the removal of the fully enclosed barrier. - Silt curtains shall be deployed for the installation and removal of the temporary barrier and at the double water gates marine access opening during its operation. 	Control potential impacts from dredging and filling works for Reclamation for Road P2	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
ERR S5.6.1						
ERR S5.6.1						
ERR S5.6.1						
ERR S5.6.1						
S5.8.5	It is important that appropriate measures are implemented to control runoff and drainage and prevent high loading of SS from entering the marine environment. Proper site management is essential to minimise surface water runoff, soil erosion and sewage effluents.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.6	Any practical options for the diversion and realignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, TM-DSS
S5.8.7	Construction site runoff and drainage should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). Good housekeeping and stormwater best management practices, as detailed in below, should be implemented to ensure that all construction runoff complies with WPCO standards and no unacceptable impact on the WSRs arises due to construction of the TKO-LT Tunnel. All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the corresponding WCZ under the TM-DSS.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, TM-DSS
S5.8.8	<p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> • use of sediment traps; and • adequate maintenance of drainage systems to prevent flooding and overflow. 	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.8						
S5.8.8						
S5.8.9	Construction site should be provided with adequately designed perimeter channel and pretreatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

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S5.8.10	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m ³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.12	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.13	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.14	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50m ³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.15	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.16	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.17	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.18	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and washwater should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheelwash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

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S5.8.19	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.20	It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There shall be no direct discharge of effluent from the site into the sea.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.21	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.22	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.23	Minimum distances of 100m shall be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes during construction and operational phases	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, TMDSS
S5.8.24	Under normal circumstances, groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction should be discharged into storm drains after the removal of silt in silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.25 - S5.8.27 & Table 5.18	Grouting would be adopted as measure to reduce the groundwater inflow into the tunnel. During the tunnel excavation, the inflow rate of groundwater into the tunnel will be measured during the excavation. The groundwater levels above the tunnel will also be monitored by piezometers. If the inflow rate exceeds the pre-determined groundwater control criteria or the groundwater drawdown exceeds the required limit, pre-excavation grouting will be required to reduce the groundwater inflow. No significant change of groundwater levels would therefore be expected. Any chemicals/foaming agents which would be entrained to the groundwater should be biodegradable and non-toxic throughout the tunnel construction. Potential groundwater quality impact would be minimal as the used material is non-toxic and biodegradable. No adverse groundwater quality would therefore be expected. Prescriptive measures in the form of an Action Plan with pre-emptive and re-active to preserve the groundwater levels at all times during the tunnel construction are set out in Table 5.18.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, Buildings Ordinance
S5.8.28	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phas	ProPECC PN 1/94, EIAOTM, WPCO

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S5.8.29 - S5.8.31	Wastewater generated from the washing down of mixing trucks and drum mixers and similar equipment should whenever practicable be recycled. The discharge of wastewater should be kept to a minimum. To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an online standby pump of adequate capacity and with automatic alternating devices. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.32	All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.33	Bentonite slurries used in diaphragm wall and borepile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.34	If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.35	Water used in water testing to check leakage of structures and pipes should be reused for other purposes as far as practicable. Surplus unpolluted water could be discharged into storm drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.36	Sterilization is commonly accomplished by chlorination. Specific advice from EPD should be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water should be reused wherever practicable.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.37	Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.38	Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.39	Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater should be tinkered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.40	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into foul sewer via grease traps capable of providing at least 20 minutes retention during peak flow.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.41	Drainage serving an open oil filling point should be connected to storm drains via a petrol interceptor with peak storm bypass.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

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S5.8.42	Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should as far as possible be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor. Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.43	Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.44	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO
S5.8.45	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.46	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The "Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes" published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO
S5.8.46	<ul style="list-style-type: none"> suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport; 					
S5.8.46	<ul style="list-style-type: none"> chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and 					
S5.8.46	<ul style="list-style-type: none"> storage area should be selected at a safe location on site and adequate space should be allocated to the storage area. 					
S5.8.47	Collection and removal of floating refuse should be performed at regular intervals on a daily basis. The contractor should be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish.	Control potential impacts from floating refuse and debris	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO,

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Ecological Impact						
S6.8.4	Measures to Minimize Disturbance					
S6.8.4	<ul style="list-style-type: none"> Use of Quiet Mechanical Plant during the construction phase should be adopted wherever possible. 	Minimize noise, human and traffic disturbance to terrestrial habitat and wildlife; and reduce dust generation	Design Team / Contractor	Land-based works are	Construction Phase	N/A
S6.8.4	<ul style="list-style-type: none"> Hoarding or fencing should be erected around the works area boundaries during the construction phase. The hoarding would screen adjacent habitats from construction phase activities, reduce noise disturbance to these habitats and also to restrict access to habitats adjacent to works areas by site workers; 					
S6.8.4	<ul style="list-style-type: none"> Regular spraying of haul roads to minimize impacts of dust deposition on adjacent vegetation and habitats during the construction activities 					
S6.8.5	Standard Good Site Practice					
S6.8.5	<ul style="list-style-type: none"> Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats. 	Reduce disturbance to surrounding habitats	Contractor	Land-based works are	Construction Phase	N/A
S6.8.5	<ul style="list-style-type: none"> Construction activities should be restricted to works areas that should be clearly demarcated. The works areas should be reinstated after completion of the works. 					
S6.8.5	<ul style="list-style-type: none"> Waste skips should be provided to collect general refuse and construction wastes. The wastes should be properly disposed off-site in a timely manner. 					
S6.8.5	<ul style="list-style-type: none"> General drainage arrangements should include sediment and oil traps to collect and control construction site run-off. 					
S6.8.5	<ul style="list-style-type: none"> Open burning on works sites is illegal, and should be strictly prohibited. 					
S6.8.5	<ul style="list-style-type: none"> Measures should also be put into place so that litter, fuel and solvents do not enter the nearby watercourses. 					
S6.8.6	Measure to Minimize Groundwater Inflow					
S6.8.6	<ul style="list-style-type: none"> The drained tunnel construction method with groundwater inflow control measures would generally be adopted. 					
S6.8.6	<ul style="list-style-type: none"> During the tunnel excavation, pre-excavation grouting could be adopted to reduce the groundwater inflow and ensure that the tunnel would meet the long term water tightness requirements. 					

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S6.8.8	Measure to Minimize Impact on Corals	Minimize loss of coral	Design team, contractor, project operator	Within reclamation areas and pier footprint	Prior construction	N/A
S6.8.8	<u>Coral translocation</u>					
S6.8.8	<ul style="list-style-type: none"> It is recommended to translocate the affected coral colonies, except the locally common <i>Oulastrea crispata</i>, within the reclamation area and bridge footprint to the other suitable locations as far as practicable. 					
S6.8.8	<ul style="list-style-type: none"> The coral translocation should be conducted during the winter months (November-March) in order to avoid disturbance during their spawning period (i.e. July to October). 					
S6.8.8	<ul style="list-style-type: none"> A detailed coral translocation plan with a description on the methodology for pretranslocation coral survey, translocation methodology, identification/proposal of coral recipient site, monitoring methodology for posttranslocation should be prepared during the detailed design stage. 					
S6.8.8	<ul style="list-style-type: none"> The coral translocation plan should be subject to approval by relevant authorities (e.g. EPD and AFCDD) before commencement of the coral translocation. All the translocation exercises should be conducted by experienced marine ecologist(s) who is/are approved by AFCDD prior to commencement of coral translocation. 					
S6.8.8	<u>Post translocation Monitoring</u>					
S6.8.8	<ul style="list-style-type: none"> A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the translocated coral communities 					
S6.8.8	<ul style="list-style-type: none"> Information gathered during each posttranslocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey. 					
S6.8.9 S6.8.10	Measure to Control Water Quality Impact <ul style="list-style-type: none"> Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area. Diverting of the site runoff to silt trap facilities before discharging into storm drain; Proper waste and dumping management; and Standard good-site practice for land-based construction. 					
S6.8.11	Compensation for Vegetation Loss <ul style="list-style-type: none"> Felling of mature trees should be compensated by planting of standard or heavy standard trees within or in vicinity of the affected area as far as practicable. Such compensatory planting for trees should be provided with at least a 1:1 ratio. In addition, vegetation at the temporarily affected area should be reinstated with species similar to the existing condition. 	Compensate for the vegetation loss	Design Team, contractor	Land-based works area	Construction phase	N/A

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Fisheries Impact						
S7.7.3	Measure to Control Water Quality Impact <ul style="list-style-type: none"> Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area. 	Control water quality impact, especially on suspended solid level	Design Team / Contractor	Marine work area	Construction phase	WQO
Waste Management (Construction Phase)						
S8.6.3	Good Site Practices and Waste Reduction Measures <ul style="list-style-type: none"> Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; Training of site personnel in site cleanliness, proper waste management and chemical handling procedures; Provision of sufficient waste disposal points and regular collection of waste; Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. 	To reduce waste management impacts	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)
S8.6.4	Good Site Practices and Waste Reduction Measures (con't) <ul style="list-style-type: none"> Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce; Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste. 	To achieve waste reduction	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28)
S8.6.5	Good Site Practices and Waste Reduction Measures (con't) The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005
S8.6.6	Good Site Practices and Waste Reduction Measures (con't) <ul style="list-style-type: none"> C&D materials would be reused in the project and other local concurrent projects as far as possible. 	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005

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S8.6.7	Storage, Collection and Transportation of Waste	To minimize potential adverse environmental impacts arising from waste storage	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005
S8.6.7	Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include:					
S8.6.7	<ul style="list-style-type: none"> Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution; 					
S8.6.7	<ul style="list-style-type: none"> Maintain and clean storage areas routinely; 					
S8.6.7	<ul style="list-style-type: none"> Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and 					
S8.6.7	<ul style="list-style-type: none"> Different locations should be designated to stockpile each material to enhance reuse. 					
S8.6.8/ Waste Management Plan	Storage, Collection and Transportation of Waste (con't)	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005
S8.6.8/ Waste Management Plan	<ul style="list-style-type: none"> Remove waste in timely manner; 					
S8.6.8/ Waste Management Plan	<ul style="list-style-type: none"> Waste collectors should only collect wastes prescribed by their permits; 					
S8.6.8/ Waste Management Plan	<ul style="list-style-type: none"> Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers; 					
S8.6.8/ Waste Management Plan	<ul style="list-style-type: none"> Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); 					
S8.6.8/ Waste Management Plan	<ul style="list-style-type: none"> Waste should be disposed of at licensed waste disposal facilities/ alternative disposal ground approved by RE and DEP; and 					
S8.6.8/ Waste Management Plan	<ul style="list-style-type: none"> Maintain records of quantities of waste generated, recycled and disposed. 					
S8.6.9/ Waste Management Plan	Storage, Collection and Transportation of Waste (con't)	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010
S8.6.9/ Waste Management Plan	<ul style="list-style-type: none"> Implementation of trip ticket system with reference to DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials, to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including disposal sites) should be proposed. 					
S8.6.11 - S8.6.13/ Waste Management Plan	Sorting of C&D Materials	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010
S8.6.11 - S8.6.13/ Waste Management Plan	<ul style="list-style-type: none"> Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site. 					
S8.6.11 - S8.6.13/ Waste Management Plan	<ul style="list-style-type: none"> Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials. 					
S8.6.11 - S8.6.13/ Waste Management Plan	<ul style="list-style-type: none"> The C&D materials should at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled in the reclamation as far as practicable before delivery to PFRFs. While opportunities for reusing the non-inert portion should be investigated before disposal of at designated landfills 					ETWB TCW No. 19/2005

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S8.6.17 – S8.6.20	<p>Sediments (con't)</p> <ul style="list-style-type: none"> Requirements of the Air Pollution Control (Construction Dust) Regulation, where relevant, shall be adhered to during boring, excavation, transportation and disposal of sediments or cement stabilization of sediment. A treatment area should be confined for carrying out the cement stabilization mixing and temporary stockpile. The area should be designed to prevent leachate from entering the ground. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). In order to minimise the potential odour / dust emissions during boring, excavation and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges/trucks. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site. 	To determine the best handling and treatment of sediment	Contractor	All works areas with sediments concern	Construction Phase	ETWB TCW No. 19/2005
S8.6.17 – S8.6.20						
S8.6.17 – S8.6.20						
S8.6.17 – S8.6.20						
S8.6.17 – S8.6.20						
S8.6.24 - S8.6.28/ Waste Management Plan	<p>Sediments (con't)</p> <ul style="list-style-type: none"> The excavated sediments is expected to be loaded onto the barge and transported to the designated disposal sites allocated by the MFC. The excavated sediment would be disposed of according to its determined disposal options and ETWB TC(W) No. 34/2002. Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO). In order to minimise the potential odour / dust emissions during boring and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP. 	To ensure handling of sediments are in accordance to statutory requirements	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance
S8.6.24 - S8.6.28/ Waste Management Plan						
S8.6.24 - S8.6.28/ Waste Management Plan						
S8.6.24 - S8.6.28/ Waste Management Plan						

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?																													
S8.6.24 - S8.6.28/ Waste Management Plan	<ul style="list-style-type: none"> In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site. 	To ensure handling of sediments are in accordance to statutory requirements	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance																													
S8.6.24 - S8.6.28/ Waste Management Plan	<ul style="list-style-type: none"> Another possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal. 							Chemical Wastes.	To ensure proper management of chemical waste	Contractor	All works sites	Construction Phase	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes Waste Disposal (Chemical Waste) (General) Regulation	S8.6.26/ Waste Management Plan	<ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 	S8.6.27/ Waste Management Plan	General Refuse	To ensure proper management of general refuse	Contractor	All works sites	Construction Phase	Public Health and Municipal Services Ordinance (Cap. 132)		<ul style="list-style-type: none"> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material. 	Impact on Cultural Heritage (Construction Phase)							S9.6.4	Dust and visual impacts	To prevent dust and visual impacts	Contractors
	Chemical Wastes.	To ensure proper management of chemical waste	Contractor	All works sites	Construction Phase	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes Waste Disposal (Chemical Waste) (General) Regulation																													
S8.6.26/ Waste Management Plan	<ul style="list-style-type: none"> If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. 						S8.6.27/ Waste Management Plan	General Refuse	To ensure proper management of general refuse	Contractor	All works sites	Construction Phase	Public Health and Municipal Services Ordinance (Cap. 132)		<ul style="list-style-type: none"> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material. 	Impact on Cultural Heritage (Construction Phase)							S9.6.4	Dust and visual impacts	To prevent dust and visual impacts	Contractors	Work areas	Construction Phase	EIAO; GCHIA; AMO		<ul style="list-style-type: none"> Temporarily fenced off buffer zone with allowance for public access (minimum 1 m) should be provided; The open yard in front of the temple should be kept as usual for annual Tin Hau festival; Monitoring of vibration impacts should be conducted when the construction works are less than 100m from the temple. 				
S8.6.27/ Waste Management Plan	General Refuse	To ensure proper management of general refuse	Contractor	All works sites	Construction Phase	Public Health and Municipal Services Ordinance (Cap. 132)																													
	<ul style="list-style-type: none"> General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material. 						Impact on Cultural Heritage (Construction Phase)							S9.6.4	Dust and visual impacts	To prevent dust and visual impacts	Contractors	Work areas	Construction Phase	EIAO; GCHIA; AMO		<ul style="list-style-type: none"> Temporarily fenced off buffer zone with allowance for public access (minimum 1 m) should be provided; The open yard in front of the temple should be kept as usual for annual Tin Hau festival; Monitoring of vibration impacts should be conducted when the construction works are less than 100m from the temple. 													
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S9.6.4	Dust and visual impacts	To prevent dust and visual impacts	Contractors	Work areas	Construction Phase	EIAO; GCHIA; AMO																													
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EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S9.6.4	<p>Indirect vibration impact</p> <ul style="list-style-type: none"> Vibration level is suggest to be controlled within a peak particle velocity (ppv) limit of 5mm/s measured inside the historical buildings; Monitoring of vibration should be carried out during construction phase. Tilting and settlement monitoring should will be applied on the Cha Kwo Ling Tin Hau Temple as well. A proposal with details for the mitigation measures and monitoring of impacts on built heritage shall be submitted to AMO for comments before commencement of work. 	To prevent indirect vibration impact	Contractors	Work areas	Construction Phase	Vibration Limits on Heritage Buildings by CEDD; GCHIA; AMO.
Built Heritage Mitigation Plan	<ul style="list-style-type: none"> Established Alert, Alarm and Action Level for the monitoring parameters. To increase the instrumentation monitoring and reporting frequency. To propose detailed action plan or contingency plan for the Engineer's approval when AAA Level is reached or exceeded. 	To prevent vibration impacts	NE/2015/01	Tin Hau Temple	Construction Phase	Vibration Limits on Heritage Buildings by CEDD; GCHIA; AMO.
Landscape and Visual Impact (Construction Phase)						
Table 10.8.1/ Landscape Mitigation Plan	CM1 - Construction area and contractor's temporary works areas to be minimised to avoid impacts on adjacent landscape.	Avoid impact on adjacent landscape areas	CEDD (via Contractor)	General	Construction planning and during construction period	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM2 - Reduction of construction period to practical minimum.	Minimise duration of impact	CEDD (via Contractor)	N/A	Construction planning	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM3 - Topsoil, where the soil material meets acceptable criteria and where practical, to be stripped and stored for re-use in the construction of the soft landscape works. The Contract Specification shall include storage and reuse of topsoil as appropriate.	To allow re-use of topsoil	CEDD (via Contractor)	General	Site clearance	As per the Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM4 - Existing trees at boundary of site and retained trees within site boundary to be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification, under which the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).	To minimize tree loss	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance and throughout construction period	ETWB TC 3/2006 and as per tree protection measures in Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM5 - Trees unavoidably affected by the works shall be transplanted where practicable. Where possible, trees should be transplanted direct to permanent locations rather than temporary holding nurseries. A detailed tree transplanting specification shall be provided in the Contract Specification and sufficient time for preparation shall be allowed in the construction programme.	To maximize preservation of existing trees	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance	ETWB TC 3/2006 and as per tree protection measures in Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM6 - Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	To maximize screening of the works	CEDD (via Contractor)	At Lam Tin Interchange and edge of Road P2 landscape deck, TKO	Beginning of construction period	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM7 - Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	As per Particular Specification

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Table 10.8.1/ Landscape Mitigation Plan	CM8 - Control of night-time lighting by hooding all lights and through minimisation of night working periods.	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM9 - Screening of works areas with hoardings with appropriate colours compatible with the surrounding area	Reduction of visual intrusion	CEDD (via Contractor)	Project site Boundary	Excretion of site hoarding	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM10 - Avoidance of excessive height and bulk of site buildings and structure	Reduction of visual intrusion and integration with environment	CEDD (via Contractor)	Built structures	Design and construction stage	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM11 - Limitation of run-off into freshwater streams, ponds and sea areas	Avoidance of contamination of water courses and water bodies	CEDD (via Contractor)	TKO reclamation, TKO tunnel portal, Cha Kwo Ling roadworks	Throughout construction period	N/A
Table 10.8.1	CM12 - Minimise area of reclamation and design the edges sensitively to tie in with adjacent coastline character	Minimise loss of Junk Bay and integration with existing coastline	CEDD (via Contractor)	Temporary reclamation for barging points at TKO and Lam Tin and permanent reclamation for TKO Interchange slip roads and Road P2	Construction planning and reclamation stages	N/A

Landfill Gas Hazard (Design and Construction Phase)

S11.5.9	A Safety Officer, trained in the use of gas detection equipment and landfill gas-related hazards, should be present on site throughout the groundworks phase. The Safety Officer should be provided with an intrinsically safe portable instrument, which is appropriately calibrated and able to measure the following gases in the ranges indicated below: Methane 0-100% LEL and 0100% v/v Carbon dioxide 0-100% Oxygen 0-21%	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note
S11.5.10 S11.5.25	Safety Measures	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note Labour Department's Code of Practice for Safety and Health at Work in Confined Space
S11.5.10 S11.5.25	<ul style="list-style-type: none"> For staff who work in, or have responsibility for "at risk" area, such as all excavation workers, supervisors and engineers working within the Consultation Zone, should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> An excavation procedure or code of practice to minimize landfill gas related risk should be devised and carried out. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> No worker should be allowed to work alone at any time in or near to any excavation. At least one other worker should be available to assist with a rescue if needed. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> Smoking, naked flames and all other sources of ignition should be prohibited within 15m of any excavation or ground-level confined space. "No smoking" and "No naked flame" notices should be posted prominently on the construction site and, if necessary, special areas should be designed for smoking. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> Welding, flame-cutting or other hot works should be confined to open areas at least 15m from any trench or excavation. 					

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S11.5.10 S11.5.25	<ul style="list-style-type: none"> Welding, flame-cutting or other hot works may only be carried out in trenches or confined spaces when controlled by a "permit to work" procedure, properly authorized by the Safety Officer (or, in the case of small developments, other appropriately qualified person). 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> The permit to work procedure should set down clearly the requirements for continuous monitoring for methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure should also require the presence of an appropriately qualified person, in attendance outside the 'confined area', who should be responsible for reviewing the gas measurements as they are made, and who should have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise should be permitted to carry out hot works in confined areas. 	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note Labour Department's Code of Practice for Safety and Health at Work in Confined Space
S11.5.10 S11.5.25	<ul style="list-style-type: none"> Where there are any temporary site offices, or any other buildings located within the Sai Tso Wan Landfill Consultation Zone which have enclosed spaces with the capacity to accumulate landfill gas, then they should either be located in an area which has been proven to be free of landfill gas (by survey using portable gas detectors); or be raised clear of the ground by a minimum of 500mm. This aims to create a clear void under the structure which is ventilated by natural air movement such that emission of gas from the ground are mixed and diluted by air. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> Any electrical equipment, such as motors and extension cords, should be intrinsically safe. During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed to prevent the migration of gases through the pipeline/conduit. All piping /conduiting should be capped at the end of each working day. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> During construction, adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus (BA) sets should be made available on site. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> Fire drills should be organized at not less than six monthly intervals. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> The contractor should formulate a health and safety policy, standards and instructions for site personnel to follow. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> All personnel who work on the site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices (in Chinese and English) should be posted at prominent position around the site warning danger of the potential hazards. 					
S11.5.10 S11.5.25	<ul style="list-style-type: none"> Service runs within the Consultation Zone should be designated as "special routes"; utilities companies should be informed of this and precautionary measures should be implemented. Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces such as manholes and service chambers, and that appropriate monitoring procedures are in place to prevent hazards due to asphyxiating atmospheres in confined spaces. Detailed guidance on entry into confined spaces is given in Code of Practice on Safety and Health at Work in Confined Spaces (Labour Department, Hong Kong). 					

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S11.5.10 S11.5.25	<ul style="list-style-type: none"> Periodically during ground-works construction within the 250m Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person. 	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note Labour Department's Code of Practice for Safety and Health at Work in Confined Space
	Monitoring					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> Routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters into the area. 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> For excavations deeper than 1m, measurements should be carried out: 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> at the ground surface before excavation commences;- 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> immediately before any worker enters the excavation; 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> at the beginning of each working day for the entire period the excavation remains open; and 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> periodically throughout the working day whilst workers are in the excavation. 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> For excavations between 300mm and 1m deep, measurements should be carried out: 	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> directly after the excavation has been completed; and 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> periodically whilst the excavation remains open. 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person. 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person. 					
S11.5.26 - S11.5.31	<ul style="list-style-type: none"> The exact frequency of monitoring should be determined prior to the commencement of works, but should be at least once per day, and be carried out by a suitably qualified or qualified person before starting the work of the day. Measurements shall be recorded and kept as a record of safe working conditions with copies of the site diary and submitted to the Engineer for approval. The Contractor may elect to carry out monitoring via an automated monitoring system. 					
S11.5.26 - S11.5.31						
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S11.5.26 - S11.5.31						
S11.5.32	The hazards from landfill gas during the construction stage within the Sai Tso Wan Landfill Consultation Zone should be minimized by suitable precautionary measures recommended in Chapter 8 of the Landfill Gas Hazard Assessment Guidance Note.	<p>construction stage within the Sai Tso Wan</p> <p>Protect the workers from landfill gas hazards</p>	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note

Table II - Observation / Reminder / Non-compliance made during Site Audit

- Key:
- ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
 - ✗ Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
 - # Follow up action will be reported in next reporting month
 - * Non-compliance of mitigation measure
 - Non-compliance but improved by the contractor

EIA Ref	Recommended Mitigation Measures	Contract No.	Work Sites	Details of Reminder/Observation	Recorded Date	Status
Water Quality Impact						
S5.8.8	· adequate maintenance of drainage systems to prevent flooding and overflow.	NE2015/01	TKO Marine Front Area	The Contractor is reminded to remove ponding water in drainage system to ensure proper function of the drainage system.	29-Dec-21	#
Ecological Impact						
--	--	--	--	--	--	--
Construction Noise Impact						
--	--	--	--	--	--	--
Landscape and Visual Impact						
--	--	--	--	--	--	--
Air Quality Impact						
S3.8.7	· Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.	NE2015/01	Portion III / Entrance	The open stockpile shall be covered.	24-Nov-21	✓
S3.8.7	· Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	NE2015/01	Portion III / ADB Car Park	PFA materials shall be covered after used	1-Dec-21	✓
S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	NE2015/01	Portion III	Observable dust cloud is recored. The Contractor is requested to carry out related mitigation measures immediately.	1-Dec-21 22-Dec-21	✓
Fisheries Impact						
--	--	--	--	--	--	--
Waste Management						
--	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	NE2015/01	TKO Bridge	The Contractor is reminded to provide drip tray for chemicals	24-Nov-21	✓
--	On interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	NE2015/01	Portion III	The Contractor is reminded to remove oil stain.	24-Nov-21 29-Dec-21	✓ #
S5.8.22	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	NE2015/01	TKO Bridge	The drip tray shall be plugged to ensure its functionality.	15-Dec-21	✓
--	· Provision of sufficient waste disposal points and regular collection of waste;	NE2015/02	Portion III	The chemical shall be placed in drip tray to avoid accidental leakage.	15-Dec-21	✓
--	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils.	NE2015/01	TKO Bridge	The Contractor is reminded to remove chemical.	22-Dec-21	✓
--	· Remove waste in timely manner;	NE2015/01	Portion III	The Contractor is reminded to remove accumulated waste.	29-Dec-21	✓
--	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils.	NE2015/02	Portion VIII	Drip tray shall be provided to chemicals / Chemicals shall be removed.	2-Dec-21	✓
Landfill Gas Hazards						
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**APPENDIX O
SUMMARIES OF ENVIRONMENTAL
COMPLAINT, WARNING, SUMMON
AND NOTIFICATION OF SUCCESSFUL
PROSECUTION**

Table O1 - Cumulative Complaint Log for Tseung Kwan O - Lam Tin Tunnel

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
584	30-Dec-21	30-Dec-21 / Portion III of NE2015/01	Resident of Yau Lai Estate	Noise	Construction Noise at morning during holiday (Yau Tong side)	Y	Investigation ongoing.	On-going
583	28-Dec-21	18-Dec-21 / Portion I of NE2017/07	Anonymous	Noise	Construction noise nuisance near Ocean Shores (Dec 2021)	Y	The complaint is considered as project-related. The barges were used for installing pair segment between 1900 and 2000. Afterwards, only the lights were turned on for safeguarding throughout the rest of the night. The details shall be referred to CIR-N157	Closed
582	22-Dec-21	22-Dec-21 / Portion IVC	Resident of Yau Lai Estate	Noise	Construction noise nuisance at normal hours (Yau Tong side, Dec 2021)	Y	Investigation ongoing.	On-going
581	22-Dec-21	15-Dec-21 / Portion IX of NE2015/02	Anonymous	Noise	Construction noise nuisance near Ocean Shores (Dec 2021)	Y	See Complaint #578	Closed
580	17-Dec-21	15-Dec-21 / non-specific (Yau Tong side)	Anonymous	Noise	Construction noise nuisance at normal hours (Yau Tong side, Dec 2021)	Y	Investigation ongoing.	On-going
579	17-Dec-21	17-Dec-21 / Portion IX of NE2015/02	Resident of Ocean Shores	Noise	Construction noise nuisance near Ocean Shores (Dec 2021)	Y	The complaint is considered as project-related. Various construction activities were conducted during the time of complaint. Acoustic box was used for the breaker. No non-compliance was found. The details shall be referred to CIR-N157.	Closed
578	16-Dec-21	15-Dec-21 / Marine Works Area	Resident of Ocean Shores	Noise	Construction noise nuisance near Ocean Shores (Dec 2021)	Y	The complaint is considered as project-related. Amour rocking unloading was conducted during the time of complaint. No non-compliance was found. The details shall be referred to CIR-N157.	Closed
577	10-Dec-21	10-Dec-21 / Cha Kwo Ling Road	Resident of Yau Lai Estate	Noise	Construction noise nuisance at normal hours (Yau Tong side, Dec 2021)	Y	Investigation ongoing.	On-going
576	16-Nov-21	15-Nov-21 / Portion IX of C2	Resident of Ocean Shores	Noise	High frequency noise nuisance during evening-time	N	It is believed that the complainant confused high- and low-frequency in the original complaint. See complaint #574 for more details.	Closed
575	17-Nov-21	Sep-21 / Cha Kwo Ling Road	Anonymous	Noise	Noise nuisance during Restricted Hours (September 2021)	Y	The complaint is considered as project-related as construction was undergoing at the time of complaint. The Contractor held a valid CNP and no non-compliance was found. Other potential noise source also exists and details shall be referred to CIR-N155	Closed
574	9-Nov-21	8-Nov-21 / Portion IX of C2	Resident of Ocean Shores	Noise	Low frequency noise nuisance during evening-time	N	The complaint is considered as non-project related as other potential low-frequency noise source exists. The details shall be referred to CIR-N154.	Closed
573C	16-Nov-21	7-Nov-2021 / Works Area of C1 (Cha Kwo Ling Road)	Resident living near Cha Kwo Ling Road	Noise	Noise nuisance between late October to early November 2021	Y	See Complaint #573A	Closed
573B	5-Nov-21	31-Oct-21 / Works Area of C1 (Cha Kwo Ling Road)	Resident living near Cha Kwo Ling Road	Noise	Noise nuisance between late October to early November 2021	Y	See Complaint #573A	Closed
573A	5-Nov-21	17-Oct-21 / Works Area of C1 (Cha Kwo Ling Road)	Resident living near Cha Kwo Ling Road	Noise	Noise nuisance between late October to early November 2021	Y	The complaint is considered project-related as construction was undergoing during the time of complaint. The Contractor held a valid CNP and no non-compliance was found. The details can be referred to CIR-N153.	Closed
572	5-Nov-21	4-Nov-21 / Non-specific	Resident of Ocean Shores	Noise	Noise nuisance near Ocean Shores	N	See Complaint #571	Closed
571	26-Oct-21	25-Oct-21 / Non-specific	Resident of Ocean Shores	Noise	Noise nuisance near Ocean Shores	N	Preliminary results from noise monitoring showed no limit level of exceedance and no non-compliance regarding construction schedule was found. The details shall be referred to CIR-N152.	Closed
570	18-Oct-21	18-Oct-21 / Non-specific	Anonymous	Noise	Noise nuisance on holiday during daytime	Y	No clear judgement was made as other potential noise source existed. Nonetheless, the Contractor held a valid CNP and no non-compliance was found. The details shall be referred to CIR-N151.	Closed
569	8-Oct-21	8-Oct-21 / Tsung Kwan O Bay	DSD	Water	Deterioration of Marine Water Quality in Tsung Kwan O Bay under Adverse Weather	N	The complaint is considered as non-project related as the general condition of the sea is muddy during the date of incident. The details can be referred to CIR-W18.	Closed
568	4-Oct-21	29-Sep-21 / Marine Works Area	Pedestrian	Odour / Water	Odour Nuisance near Tsung Kwan O Bay (Sep 2021)	N	The complaint is considered as non-project-related. Measures such as adopting low-sulphur content diesel as far as possible is recommended. The details can be referred to CIR-O9.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
567	29-Sep-21	14-Sep-2021 / Marine Works Area (C6)	Anonymous	Noise	Construction Works during Restricted Hours (Sep 2021)	Y	The complaint is considered as project-related and no non-compliance was recorded. The monitoring result of evening noise at Tsung Kwan O throughout September 2021 was reviewed and no limit level exceedance was found. The details shall be referred to CIR-N150.	Closed
566	17-Sep-21	16-Sep-21 / Portion IVC (C1)	Resident of Yau Lai Estate	Noise	Construction Noise nuisance from Portion IVC of NE/2015/01	Y	See Complaint #563	Draft CIR submitted
565	10-Sep-21	9-Sep-21 / Portion III	EPD	Air	Air pollution from construction dust	N	See complaint #564	Closed
564	10-Sep-21	6-Sep-21 / Portion I	Anonymous	Air	Air pollution from construction dust	N	Exceedance of 24hr TSP were recorded and evidence of air-quality-related environmental deficiencies were identified during site inspections. The complaint is considered project-related and details shall be referred to CIR-A22.	Draft CIR submitted
563	2-Sep-21	2-Sep-21 / Portion III	Resident living in Cha Kwo Ling	Noise	Construction noise during evening time (Sep 2021)	Y	The complaint is considered as project-related. Monitoring results indicate the construction noise are close to the limit level. The details shall be referred to CIR-N149.	Closed
562	19-Aug-21	15-Aug-21 / Lei Yu Mun Road	Anonymous	Noise	Construction noise nuisance near Lei Yu Mun Road on Sunday	Y	The complaint is considered as project-related as the construction works were carried out during the time of complaint. No monitoring was conducted on Public Holiday. The details shall be referred to CIR-N148.	Closed
561	6-Aug-21	6-Aug-2021 / Non-specific	Resident living in Tiu Keng Ling	Noise	Construction Noise Nuisance on Weekday during Daytime (Aug 2021)	Y	The complaint was considered as project-related. No non-compliance and limit level of daytime construction noise was recorded during late July 2021 and early August 2021. The details of complaint shall be referred to CIR-N147.	Closed
560	31-Jul-21	31-Jul-2021 / Portion VIII	Resident from Ocean Shores	Noise	Construction Noise Nuisance on Saturday near Ocean Shores (Jul 2021)	Y	The complaint is considered as project-related. Results of construction noise is reviewed and no limit level exceedance was recorded. No non-compliance was found. The details shall be referred to CIR-N146.	Closed
559	3-Aug-21	Jan 2021 - Jun 2021 / Marine Works Area	Resident from Ocean Shores	Noise	Noise Nuisance near Ocean Shores (Jan - Jun 2021)	Y	The complaint included a long-period of time and the current noise mitigation measures were reviewed. No limit level of construction noise was recorded throughout Jan 21 - Jun 21, Despite the complaint is considered as project-related, no non-compliance was recorded. The details shall be referred to the CIR-N145.	Closed
558	11-Jul-21	11-Jul-2021 / Marine Works Area	Anonymous	Working Hours	Operation of Marine Construction Works during Restricted Hours (Jul - 2021)	N	The barge shown in the photo provided by the Complainant was not belong to the Project. The complaint was non-valid and thus the complaint is considered as non-project-related. The details shall be referred to CIR-O8.	Closed
557	20-Jul-21	19-Jul-2021 / Eastern Harbour Crossing	Resident from Bik Lai Estate	Noise	Noise Nuisance from Construction Works (C1 - Jul)	Y	The complaint is considered as project-related. Construction works were undergoing at the time of complaint and PMEs were operating. No non-compliance was recorded. The details shall be referred to CIR-N144.	Closed
556	27-Jun-21	27-Jun-2021 / Marine Works Area	Anonymous	Working Hours	Operation of Marine Construction Works during Restricted Hours	Y	Tug boat and crane barge were used for relocating barge and airlifting materials. The Contractors held valid and approved CNP. No non-compliance was recorded. The details shall referred to CIR-N143.	Closed
555	29-Jun-21	29-Jun-21 / Marine Works Area	Anonymous	Water	Suspected Muddy Water at the Marine Works Area	N	No direct evidence point towards C2 was the source of muddy water. The details of complaint shall be referred to CIR-W17.	Closed
554	29-Jun-21	25-Jun-21 / Marine Works Area	Anonymous	Light / Working Hours	Construction works during restricted hours and light nuisance	N	No construction was undergoing during the time of complaint. The light shown in photo was used as safeguarding purpose. Details shall be referred to CIR-O7.	Closed
553	27-May-21	26-May-21 / C3	Anonymous	Air	Air quality impact nuisance nearby Po Yap Road (C3 - Apr & May 2021)	N	See Complaint #551	Closed
552	18-May-21	17-May-21 / C1	Anonymous	Noise	Noise Nuisance from Construction Works (C1 - May)	Y	The complaint is considered as project-related. Construction activities were undergoing during the time of complaint and deficiencies of noise mitigation measures can be observed. The details shall be referred to CIR-N142.	Closed
551	21-May-21	23-Apr-21 / C3	Resident from Ocean Shores	Air	Air quality impact nuisance nearby Po Yap Road (C3 - Apr & May 2021)	N	The contractor had applied mitigation measures such as regular watering and covering stockpile of dusty materials. The complaint is considered as project-related and details shall be referred to CIR-A21	Closed
550	21-May-21	4-May-21 / C2 & C3	Resident from Ocean Shores	Noise	Noise nuisance at early morning (C2&C3 May 2021)	N	The complaint is considered as non-project-related as both contractor and RE confirmed that no construction was carried out on or before 8 a.m. on the date of incident. The details shall be referred to CIR-N139	Closed
549	26-Apr-21	21-Apr-21 / C1	Mr. Chan from Hong Nga Court	Noise	Noise nuisance at morning (C1-Late Apr)	Y	See Compliant #547	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
548	26-Apr-21	23-Apr-21 / C1	Mrs. Ho from Lung pak House	Noise	Noise nuisance at morning (C1-Late Apr)	Y	See Compliant #547	Closed
547	26-Apr-21	25-Apr-21 / C1	Mr. Lau from Yung Lai House	Noise	Noise nuisance at morning (C1-Late Apr)	Y	The complaint is considered as project-related. Construction works were undergoing at the time of complaint and PME were operating. No non-compliance was recorded. The details shall be referred to CIR-N141.	Closed
546	19-Apr-21	4&11-Mar-21 / Marine Works Area	Anonymous	Noise	Noise nuisance on holiday mornings (C6 - Apr)	Y	The complaint is considered as project-related and rebar fixing and framework erection was undergoing. No PME was operating during the time of complaint. A valid CNP is held by the Contractor and no non-compliance was identified. The details shall be referred to CIR-N140.	Closed
545	19-Apr-21	22-Mar-21 / Portion IX	Mr. Lai (Sai Kung District Council Member)	Noise	Noise nuisance on holiday mornings (C2 - Mar)	N	See Complaint #538	Closed
544	19-Apr-21	11-Mar-21 / Portion III	Resident of Yau Lai Estate	Noise	Noise Nuisance from Construction Works (C1 - Mar)	Y	See Complaint #521	Closed
543	19-Apr-21	3-Apr-21 / Portion III	Resident of Yau Lai Estate	Noise	Noise Nuisance from Construction Works (C1 - Apr)	Y	See Complaint #534	Closed
542	19-Apr-21	3-Apr-21 / Portion III	Resident of Yau Lai Estate	Noise	Noise Nuisance from Construction Works (C1 - Apr)	Y	See Complaint #534	Closed
541	19-Apr-21	7-Apr-21 / Portion III	Resident of Ping Tin Estate	Noise	Noise Nuisance from Construction Works (C1 - Apr)	Y	See Complaint #534	Closed
540	19-Apr-21	14-Apr-21 / Portion III	Mr. Wang (Kwun Tong District Council Member)	Noise	Noise Nuisance from Construction Works (C1 - Apr)	Y	See Complaint #534	Closed
539	16-Apr-21	22-Mar-21 / Portion IX	Resident of Ocean Shores	Noise	Suspected Construction Works during evening-time (C2 - Mar)	N	See Complaint #534	Closed
538	16-Apr-21	Non-specific / Works area near Ocean Shores	Resident of Ocean Shores	Noise	Noise nuisance on holiday mornings (C2 - Mar)	N	No works was conducted during the time of complaint. The complaint is considered as non-project-related. Details shall be referred to CIR-N138.	Closed
537	15-Apr-21	14/4/2021 / Works area near Park Central	Resident of Park Central	Noise	Noise Nuisance due to Breaking Works (C3- Apr)	Y	Breaking works was conducted during the time of complaint. No limit level for noise monitoring was triggered. The complaint is considered as project-related. Details shall be referred to CIR-N137.	Closed
536	14-Apr-21	7/4/2021 / Portion IX	Resident of Ocean Shores	Noise	Suspected low-frequency noise nuisance at Portion IX (Apr 2021)	N	The complaint is considered as non-project-related as no PME was turned on during the time of complaint. Details shall be referred to CIR-N136.	Closed
535	14-Apr-21	7/4/2021 / C1	Resident of Lam Tin District	Noise	Noise nuisance during nighttime (C1 - Apr 2021)	Y	See Complaint #534	Closed
534	8-Apr-21	3/4/2021 / C1	Resident of Yau Lai Estate	Noise	Noise nuisance during nighttime (C1 - Apr 2021)	Y	The complaint is considered as project-related as there was construction works conducted at Kwun Tong Bypass. The details shall be referred to CIR-N135.	Closed
533	26-Mar-21	15-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #521	Closed
533A	2-Mar-21	2-Mar-2021 / Portion IVC or III	Anonymous	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #521	Closed
532	16-Mar-21	10-Mar-2021 / Zone C	Mr. Lui (Sai Kong District Council Member)	Noise	Noise nuisance during daytime (C3 - Mar 2021)	Y	See Complaint #529	Closed
531	10-Mar-21	10-Mar-2021 / Zone C	Resident of Park Central	Noise	Noise nuisance during daytime (C3 - Mar 2021)	Y	See Complaint #529	Closed
530	10-Mar-21	10-Mar-2021 / Zone C	Resident of Park Central	Noise	Noise nuisance during daytime (C3 - Mar 2021)	Y	See Complaint #529	Closed
529	10-Mar-21	10-Mar-2021 / Zone C	Resident of Park Central	Noise	Noise nuisance during daytime (C3 - Mar 2021)	Y	The complaint is considered as project-related and no non-compliance was found. The noise origin was believed to be the breaking works conducting at Po Yap Road. The concerned breaking works was completed on 13 Mar 2021. The details shall be referred to CIR-N134.	Closed
528	10-Mar-21	10-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Percussive Noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
527	10-Mar-21	10-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Percussive Noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
526	10-Mar-21	10-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Percussive noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
525	9-Mar-21	5-Mar-2021 / Portion IX	Anonymous	Noise	Noise nuisance during daytime (C2 - Mar 2021)	Y	See Complaint #522	Closed
524	9-Mar-21	9-Mar-2021 / Portion IVC or III	Mr. Wong from District Councilors	Noise	Percussive noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
523	9-Mar-21	9-Mar-2021 / Portion IVC or III	Resident of Yau Lai Estate	Noise	Percussive noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
523A	5-Mar-21	5-Mar-2021 / Portion III or IVC	Anonymous	Noise	Percussive noise nuisance at morning (C1 - Mar 2021)	Y	See Complaint #521	Closed
522	4-Mar-21	3-Mar-2021 / Portion IX	Resident of Ocean Shore	Noise	Noise nuisance during daytime (C2 - Mar 2021)	Y	The complaint case was considered as project-related. The Contractor is reminded to close the gap of noise barrier and repair damaged noise barriers. The details shall be referred to CIR-N132.	Closed
521	4-Mar-21	3-Mar-2021 / Portion IVC or III	Resident of Yau Lei Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	The complaint is considered as project-related. No limit level of construction noise was recorded during March 2021 and the details shall be referred to CIR-N133.	Closed
521A	1-Mar-21	2-Mar-2021 / Portion IVC or III	Resident of Ping Tin Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #521	Closed
520	1-Mar-21	1-Mar-2021 / Portion IVC or III	Resident of Yau Lei Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #518	Closed
520A	1-Mar-21	Non-specific	Resident of Yau Lei Estate	Noise	Noise nuisance during daytime (C1 - Mar 2021)	Y	See Complaint #521	Closed
519	24-Feb-21	21-Feb-2021 / Non-specific	Resident of Ocean Shores	Noise	Noise nuisance on morning (Feb 2021)	N	No PME was operating on-site at the time of complaint and the complaint is considered as non-project-related. The details shall be referred to CIR-N131	Closed
518	19-Feb-21	12-13 & 18 Feb 2021 / Non-specific	Resident of Yau Lei Estate & Hong Pak Court	Noise	Percussive noise nuisance at morning (C1)	Y	Investigation result shows that the percussive noise nuisance was generated from Portion IVC. The construction work started after 0700 and no limit level of daytime noise exceedance was recorded. The details shall be referred to CIR-N130	Closed
518A	1-Mar-20	27 Feb 2021 / Non-specific	Non-specific	Noise	Percussive noise nuisance at morning (C1)	Y	See complaint #518	Closed
518B	1-Mar-20	25 Feb 2021 / Non-specific	Resident of Hong Pak Court	Noise	Percussive noise nuisance at morning (C1)	Y	See complaint #518	Closed
517	8-Feb-21	8/2/2021 / Non-specific	Resident of Ocean Shores	Noise	Noise Nuisance from Excavator	Y	No clear judgement was made as the complainant's information is too vague and it is hard to pinpoint the excavator mentioned in the complaint was in fact the one located at the project site. The details shall be referred to CIR-N129.	Closed
516	26-Jan-21	21-Feb-2021 / Non-specific	Resident of Ocean Shores	Noise / Operating Hours	Continous Noise Nuisance during Nighttime (Jan 2021)	N	No PME was operating on-site on the date of complaint. The details shall be referred to CIR-N128	Closed
515	23-Jan-21	12-13 & 18 Feb 2021 / Non-specific	Resident of Yau Lei Estate & Hong Pak Court	Noise		N	See complaint #504	Closed
514	22-Jan-21	8/2/2021 / Non-specific	Resident of Ocean Shores	Noise		Y	See complaint #511	Closed
513	22-Jan-21	15-Jan-2021 / Zone D	Resident of Ocean Shores	Air	Air quality impact due to open stockpile	N	See Complaint #508	Closed
512	22-Jan-21	20-Jan-2021 / Zone D				N		
511	20-Jan-21	6/1/2021 & 15/1/2021 / Portion IX of C2	Resident of Ocean Shores	Noise	Continous Noise Nuisance during Nighttime (Jan 2021)	Y	The complaint is considered as project-related as barge was operating in during time of complaint. The details shall be referred to CIR-N128	Closed
510	19-Jan-21	Non-specific / Portion IX of C2	Resident of Ocean Shores	Noise		N	See complaint #505	Closed
509	15-Jan-21	15/1/2021 / Portion IX of C2	Resident of Ocean Shores	Noise		N	See complaint #505	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
508	13-Jan-21	5/1/2020 / Storage Area of C3	Resident of Ocean Shores	Air	Air quality impact due to open stockpile	N	The Complaint was found project-related. The dust origin was from the stockpile at Zone A of C3. The Contractor had sprayed water regularly to suppress the dust emission and improvement had been observed over Jan 2021. Details shall be referred to CIR-A20.	Closed
507			Resident of Ocean Shores	Air		N		
506	7-Jan-21	6-Jan-2020 / Portion IX	Resident of Ocean Shores	Noise	Continous Noise Nuisance during Nighttime (Jan 2021)	Y	See Complaint #500	Closed
505	4-Jan-21	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		N	No clear judgement was made. Other than the construction site, other source for low-frequency noise was also identified. Details shall be referred to CIR-N128	Closed
504	4-Jan-21	1-Jan-2020/C1	Resident of Yau Lai Est.	Noise	Suspected noise nuisance from work site	N	The complaint was considered non-project-related as there was no PME working on site. The details shall be referred to CIR-N127.	Closed
503	30-Dec-20	21-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise	Noise nuisance at nighttime on a weekday	Y	See complaint #500	Closed
502	28-Dec-20	22&23-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		Y		Closed
501B	23-Dec-20	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		Y		Closed
501A	23-Dec-20	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		N	No direct evidence show that the Contractor operated barges at the time of complaint. Therefore the complaint was considered as non-project-related. The details shall be referred to CIR-N126.	Closed
501	23-Dec-20	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		Y	The Contractor operated PME(s) at evening-/night- time without an approved valid CNP. The complaint is considered as project-related.The details shall be referred to CIR-N126.	Closed
500	22-Dec-20	22-Dec-2020 / Portion IX	Resident of Ocean Shores	Noise		Y		Closed
499	21-Dec-20	20/12/2020 / marine works area	Resident of Ocean Shores	Operating hours / Noise	Horning noise nuisance on Sunday	N	The complaint is considered as non-project-related as no barge was working under the TKOLTT project at the time of complaint. The details shall be referred to CIR-O6.	Closed
498	18-Dec-20	17-Dec-2020 / Marine Works Area	Resident of Ocean Shores	Noise	Low frequency noise & occasional piling noise nuisance during night-time	Y	The complaint is considered as project-related as the noise nuisance was coming from water pumps that working 24/7. Details shall be referring to CIR-N125.	Closed
497	9-Dec-20	Days on/before 9/12/2020 / Portion IVC	Resident of Yau Lai Estate	Air & Noise	Dust & Noise Nuisance near Lam Tin Interchange (December)	Y	See Complaint #494	Closed
496	3-Dec-20	Days before 3-Dec-20 / Lam Tin Tunnel	Resident of Hong Pak Court	Noise	Dust & Noise Nuisance near Lam Tin Interchange (December)	Y	See Complaint #494	Closed
495	16-Dec-20	12-Dec-2020 / Po Yap Road	Resident of Park Central	Noise	Night time machanical noise nuisance	Y	The complaint is considered as project-related as the noise nuisance was coming from water pumps that working 24/7. Details shall be referring to N124.	Closed
494	5-Dec-20	Early Dec 2020 / Portion III	Resident of Lung Pak House / Staff from Elderly Hoouse nearby	Noise	Noise Nuisance near Lam Tin Interchange (December)	Y	The complaint is considered as project-related and no non-compliance in CNMP had been recorded. The contractor is reminded to ensure the effectiveness of noise mitigation measures by various measures including repairing damaged noise barrier. The details shall be referred to CIR-C40.	Closed
493	8-Dec-20	25-Nov-2020 & 2-Dec-2020 / Works area nearby Park Central	Resident of Park Central	Noise	Percussive noise nuisance from at early morning	N	The complaint is considered as non-project-related. No operating PME(s) under TKO-LTT project at the time of complaint was known to emit percussive noise at the time of complaint. The details shall be referred to CIR-N123.	Closed
492	18-Nov-20	18-Nov-2020 / Portion VIII (C2)	Resident of Ocean Shores	Noise	Construction Noise nuisance at Morning	Y	Preliminary result reveals that pre-boring and breaking works had been conducted at the time of complaint. The details shall be referred to CIR-N122.	Closed
491	18-Nov-20	16-Nov-2020 / C1	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Restricted Hour)	Y	See Complaint #490.	Closed
490	13 & 16 Nov 20	5-12 & 14-Nov-2020 / C1	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Restricted Hour)	Y	The complaint is considered as project-related. The origin of noise nuisance was believed to be construction works at Tunnel S1 and S2. No non-compliance was found and the details shall be referred to CIR-N121	Closed
489	13-Nov-20	13-Nov-2020 / C1	Resident of Yau Lai Estate	Air & Noise	Dust and Noise Nuisance in Portion IVC	Y	The complaint was found project-related. The contractor had adpoted various noise mitigation measures suc as rock splitting method and erection of semi-enclosure to further reduce the noise impact to its surrounding. The details shall be referred to CIR-C39.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
488	13-Nov-20	10-Nov-2020 / C2	Resident of Ocean Shores	Air	Dust emission from construction works	N	The complaint was found project-related. The Contractor is recommended to spray water more frequently to suppress the dust nuisance. The details shall be referred to CIR-A19.	Closed
487	11-Nov-20	5-Nov-2020 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to November)	Y	See Compliant #468	Closed
486	11-Nov-20	6-Nov-2020 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to November)	Y	See Compliant #468	Closed
485	7-Nov-20	7-Nov-20	Resident of Park Central	Noise	Percussive noise nearby Park Central	Y	The complaint is considered non-project-related as no PME that know to emit percussive noise was operating during the time of complaint. The details shall be referred to CIR-N120.	Closed
484	7-Nov-20	7-Nov-20 / Portion IV	Resident of Ocean Shores	Noise	Noise Nuisance from Excavation Works	Y	See complaint #481	Closed
483	6-Nov-20	6-Nov-20	Resident of Ocean Shores	Noise	Low-frequency noise at night (Oct&Nov 2020)	N	The low-frequency noise was found coming from the water pumps that works 24/7 and other source may also contribute to the noise nuisance. The Contractor had followed the approved CNP. The complaint is considered project-related and shall be referred to CIR-N119	Closed
482	30-Oct-20	29-Oct-2020 / C2	Non-specific	Air	Dust emission from construction works	N	Despite the contractor had sprinkle water regularly, the haul road was found dry during site audit session. The Contractor is reminded to sprinkle water more frequently and cover stockpiles of dusty material to reduce dust emission. The details shall be referred to CIR-A19	Closed
481	3-Nov-20	2-Nov-2020 /Portion IV	Resident of Ocean Shores	Noise	Noise Nuisance from Excavation Works	Y	The complaint is considered project-related as no other possible noise origin is know to emit such kind of noise at the surrounding. The Contractor had been reminded to applied lubricants and tighten the screws to reduce noise level. The details shall be referred to CIR-N118	Closed
480	3-Nov-20	3-Nov-2020 / Portion IVC	Resident of Yau Lai Est	Noise	Noise Nuisance near Lam Tin Interchange (Late September to November)	Y	See Complaint #469	Closed
479	3-Nov-20	2-Nov-2020 / Portion IVC	Resident of Yau Lai Est	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See Complaint #469	Closed
478	3-Nov-20	30-Oct-2020 / Portion IVC	Mr. Wong from District Councilors	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See Complaint #469	Closed
477	30-Oct-20	15-Oct-2020 / Portion IVC	Non-specific	Air	Air & Noise Nuisance near Lam Tin Interchange (October)	N	See Complaint #469	Closed
476	29-Oct-20	29-Oct-2020 / Portion IVC	Resident of Yau Lai Est	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See Compliant #468	Closed
475	28-Oct-20	Not specific / Lam Tin interchange	Non-specified (near Yau Lai Estate)	Noise	Air & Noise Nuisance near Lam Tin Interchange (October)	Y	See Complaint #469	Closed
474	23-Oct-20	23-Oct-20 / Portion IX	Resident from Ocean Shores	Noise	Low-frequency noise at night (Oct-Nov 2020)	N	The low-frequency noise was found coming from the water pumps that works 24/7 and other source may also contribute to the noise nuisance. The Contractor had followed the approved CNP. The complaint is considered project-related and shall be referred to CIR-N119	Closed
473	21-Oct-20	19-Oct-20 / Portion IX	Resident from Ocean Shores	Noise	Noise Nuisance near Portion IX	Y	See complaint #459	Draft CIR submitted
472	20-Oct-20	20-Oct-20 / Portion IV	Resident from Ocean Shores	Noise	Noise Nuisance from Excavation Works	Y	Preliminary results show the noise source was from the backhoe at Portion IV. The Contractor had applied mitigation measures such as adding lubricant to mounting parts to alleviate the problem. The details shall be referred to CIR-N118	Closed
471	6-Oct-20	6-Oct-20 / Portion IX	Resident from Ocean Shores	Noise	Noise nuisance at morning (Oct 2020)	Y	See complaint #459	Draft CIR submitted

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
470	10-Oct-20	3-10 Oct 20 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See Compliant #468	Closed
469	10-Oct-20	9-10 Oct 20 / Lam Tin Interchange	DC Member (Mr. Wang)	Noise	Air & Noise Nuisance near Lam Tin Interchange (October)	Y	The complaint is considered as project-related and no non-compliance in CNMP had been recorded. The contractor had adopted mitigation measures such as deploying noise absorbing materials among construction site and spraying water near dust generating activities. The details shall be referred to CIR-C38.	Closed
468	5-Oct-20	Mondays - Saturdays / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	See complaint #468A	Closed
468A	5-Oct-20	Mondays - Saturdays / Portion IVC	Resident of Yau Lai Estate	Noise	Noise Nuisance near Lam Tin Interchange (Late September to Early November)	Y	The complaint was considered project-related. Mitigation measures such as deploying noise barrier and attempts on blocking direct line of sight from NSR was observed. The details shall be referred to CIR-N117.	Closed
467	23-Sep-20	19-Sep-2020 / Portion IX	Resident of Ocean Shores	Noise	Daytime noise nuisance (mid-September)	Y	See complaint #459	On-going
466	22-Sep-20	20-Sep-2020 / Portion IX		Noise / Working Hours	Noise nuisance on Sunday	Y	Investigation result shows none of the contract under TKOLTT conducted works on Sunday. The details shall be referred to CIR-O5	Closed
465	20-Sep-20	20-Sep-.2020 / Portion IX		Y	Closed			
464	17-Sep-20	August 2020 / Portion IX	Resident of Ocean Shores	Noise	Continuous Noise Nuisance over Aug 2020	Y	The investigation shows no non-compliance and action level for noise is triggered. The details shall be referred to CIR-N113	Closed
463	15-Sep-20	15-Sep-2020 / Non-specific	Anonymous	Noise	Percussive noise nuisance at early morning	Y	The complaint is considered non-project-related. The investigation pointed out the Contractor had maintain wastewater treatment facilities properly and no action or limit level of surface SS was triggered after the incident. The muddy water was coming from DSD desilting compound. Details shall be referred to CIR-W16	Closed
462	8-Sep-20	10-Sep-2020 / Portion IX	Anonymous	Noise	Suspected muddy water discharge	N		Closed
461	5-Sep-20	5-Sep-2020 / Portion IX	Resident of Ocean Shores	Noise	Squeaky noise on a Saturday Morning	Y	The squeaky noise believed was coming from operating barges at C6. No non compliance was found. Details shall be referred to CIR-N115	Closed
460	8-Sep-20	8-Sep-2020 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise nuisance near East Harbour Cross Tunnel	Y	See complaint #456	Closed
459	4-Sep-20	1-Sep-2020 / Portion IX	Resident of Ocean Shores	Noise	Noise nuisance at morning (Early Sep 2020)	Y	The complainant had repeatedly complaint about the continuous noise nuisance from September to October 2020. The complaint is considered as project-related. The result of noise monitoring had been reviewed and no limit level of exceedance was found. The details of complaint shall be referred to CIR-N114.	Draft CIR submitted
458	28-Aug-20	Early August 20 / Lam Tin Tunnel	Resident from Yau Lai Estate	Noise	Long-term noise nuisance since early August	Y	See complaint #456	Closed
457	27-Aug-20	24&25-Aug-20 / Portion IX	Resident from Ocean Shores	Noise	Noise nuisance at morning (Late August 2020)	Y	See complaint #456	Closed
456	18-Aug-20	18-Aug-20 / Portion IVC	Resident from Yau Lai Estate	Noise	Noise nuisance near East Harbour Cross Tunnel	Y	Investigation showed the nuisance was generated by breaking works. The contractor had promised to complete the semi-enclosure by October 2020. The details shall be referred to CIR-N112	Closed
455	18-Aug-20	Dates on/before 1-Aug-20 / Lam Tin Tunnel	Resident from Yau Lai Estate	Noise	Noise nuisance from tunnel works	Y	Breaking had been conducted during the time of complaint. The details shall be referred to CIR-N111	Closed
454	11-Aug-20	2-Aug-20 / Sea outside Ocean Shores	Resident from Ocean Shores	Operation Hours	Working on restricted hours and public holiday	N	The working barge was believed to be working under the Cross Bay Link project. None of the barges working on the time of complaint belongs to TKOLTT project. Despite works had been conducted, no PME was turned on during the time of complaint. The details shall be referred to CIR-O4.	Closed
453	3-Aug-20	3-Aug-20 / Western Marine Works Area	Resident from Ocean Shores	Water	Suspected muddy water and worn out silt curtain	N	The suspected muddy water was due to the strong tidal movement under typhoon influence. The silt curtain was not deployed properly when the typhoon was landed. Details shall be referred to CIR-W15	Closed
452	1-Aug-20	31-Jul-20 / Marine Works Area	Resident from Ocean Shores	Noise	Squeaky noise during nighttime	Y	The noise was originated from the wires that used for tightening the barge. The Contractor had not fasten the wire completely as strong wave and wind action may tear up the wire and made the barge stranded. The details shall be referred to CIR-N110.	Closed
451	28-Jul-20	28-Jul-20 / Portion IX	Resident from Ocean Shores	Noise	Breaking noise on the morning	Y	Breaking had been conducted during the time of complaint. The details shall be referred to CIR-N109	Closed

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450	23-Jul-20 24-Jul-20	23&24-Jul-20 / Works area nearby Ocean Shores	Residents from Ocean Shores	Noise	Noise nuisance on weekdays	Y	The noise nuisance was originated from high-noise level works such as breaking and drilling. The details shall be referred to CIR-N108	Draft CIR submitted
449	16-Jul-20	12-Jul-20 / Lam Tin Tunnel	Resident of Hong Pak Court	Noise	Noise Nuisance Suspected from Tunnel (C1)	Y	Breaking work was conducted near the underground of Hong Pak Court. No non-conformance of CNP was identified, contractor is reminded to strictly follow the conditions of CNP and the time period of CNP. The details shall be referred to CIR-N110.	Closed
448	4-Jul-20	4-Jul-20 noon / Marine works area nearby Ocean Shores	Resident of Ocean Shores	Air	Dark Smoke Emission from Barge	N	The dark smoke was originated from the barge. It is common that dark smoke will be released when the barge's engine was starting. The details shall be referred to CIR-A18.	Closed
447C	10-Jul-20	28-Jun-2020 / TKO South open sea	Anonymous	Water	Suspected oil leakage at the TKO south open sea	N	The suspected oil leakage was believed to be an algae bloom over the whole bay area. The noise nuisance from speeding was considered not project related. The details shall be referred to CIR-C37	Closed
447B	10-Jul-20	29-Jun-2020 / TKO south open sea & flyover towards TKO Chinese Permanent Cemetery		Water / Noise	Suspected muddy water spillage and noise nuisance due to speeding	N		
447A	10-Jul-20	24-Jun-2020 / Non-specific		Noise	Long-term noise nuisance and insufficient noise mitigation measures	Y		
446	12-Jun-20	31-May-2020 / Area nearby Yau Lai Est	Resident of Yau Lai Estate	Noise	Noise nuisance at Morning nearby East Harbour Crossing	Y	See complaint 442.	Closed
445	11-Jun-20	11-Jun-20 / Park Central	Resident of Park Central	Air	Pungent smell suspected coming from the work sites	N	See complaint 443B.	Closed
444	6-Jun-20	6-Jun-20 / Portion IX	Residents of Ocean Shores	Water	Flooding within work site and suspected muddy water spillage after downpour	N	The flooding is a normal phenomenon as the site boundary have been embarked. The suspected muddy water is wide-spread among the open sea at TKO south and no exceedance of SS were recorded after the incident. The complaint is considered non-project-related and details shall be referred to CIR-W14.	Closed
443B	6-May-20	Non-specific	Anonymous	Air/Noise	Odour nuisance nearby TKO MTR Station	N	The preliminary result showed no direct relationship between the nuisance and the construction works. The details shall be referred to CIR-A17.	Closed
443A					Noise nuisance at Night and Air Quality Impact from Works	Y	The complaint is considered non-project-related. There is no direct evidence showing the project site is the origin of the nuisance. The details shall be referred to CIR-C36	Closed
442	22-May-20	22-May-20 / LT Tunnel	Resident from Hong Pak Court	Noise	Noise nuisance from Tunnel Works	Y	The noise is believed to be breakin inside the tunnel. The CNP was compiled with and contractor is reminded to review breaking schedule to less sensitive hour. The details shall refer to CIR-N105.	Closed
441	8&9-Apr-20	9-Apr-20 / TKO surcharge area	Residents of Ocean Shores	Air/Noise	Noise Nuisance on early morning and Air Quality Works from Excavation Works	Y	The work schedule of C2 had been reviewed. The "beeping" noise is originated from C2 due to safety issue (for mobilization of materials with crane). The noise nuisance is believed to be coming from the vibration hammer. The Contractor had water the exposed area regular to reduce dust impact to the surrounding. The details shall be referred to CIR-C35	Closed
440	13&17-May-20	13-May-2020/Surcharge Area of TKO	Residents of Ocean Shores	Noise	Noise generation in early mornings of early May	Y	The work schedule of C2, C3 & C6 had been reviewed. The noise source is believed to be generated from C2 due to sheet-piling. The details shall be referred to CIR-N104.	Closed
439	7-Apr-20 & 24-Apr-20	April 2020 / Works area near Park Central (non-specific)	Residents of Park Central	Odour	Continuous diesel fuel odour nuisance near Park Central	N	No direct evidence proved that the odour source was originated from the work sites of TKOLTT. The details shall be referred to CIR-A16.	Closed
438	18-Apr-20	18-Apr-20 / Marine Works Area at TKO	Residents of Ocean Shores	Noise/ Light	Blasting, High Frequency Noise and Light in Tseung Kwan O	Y	The complaint was valid in regard of noise. Blasting had been carried out during the midnight and the Contractor is reminded to strict follow requirements of CNP. The light source was originated from the construction vessels due to safety reason and guard watching. Details shall be referred to CIR-C34.	Closed
437	27-Mar-20	27-Mar-2020 / Surcharge Area (C2)	Resident of Ocean Shores	Noise	Low Frequency Noise during Midnight	Y	The noise source was the malfunctioned dewatering pumps. The details shall be referred to CIR-N103	Closed
436	26-Mar-20	26-Mar-20/ Portion IVC	District Council Member (Mr. Wong)	Noise	Noise nuisance, vibration and spectedly insufficient mitigation measures in Lam Tin	Y	See complaint #431-433.	Closed

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435	23-Mar-20	23-Mar-20/ Lam Tin Tunnel	Resident of Cha Kwo Ling Village	Noise	Groundborne Noise from Blasting in the Evening	Y	Blasting was conducted at the time of complaint. The vibration monitoring conducted near Tin Hau Temple was considered the vibration level was acceptable. The details shall be referred to CIR-N102.	Closed
434	23-Mar-20	20-Mar-20/ Lam Tin	District Council Member (Mr. Wong)	Noise	Noise nuisance from Construction Works during Holiday	Y	See compliant #427.	Closed
433	20-Mar-20	20-Mar-20/ Lam Tin	Resident of Hong Pak Court	Noise	Noise nuisance, vibration and suspectedly insufficient mitigation measures in Lam Tin	Y	The time period and PME of major works conducted during daytime of the complaints, no non-compliance in CNMP and during site audits has been recorded. The Contractor is recommended to provide alternative noise mitigation measures such as acoustic box for noisy PMEs and regularly repair materials of the noise mitigation measures. Details shall be referred to CIR-N101.	Closed
432	18-Mar-20	18-Mar-20 / Portion IVC	Resident of Yau Lai Estate	Noise	Noise nuisance, vibration and suspectedly insufficient mitigation measures in Lam Tin	Y		
431	14-Mar-20	14-Mar-20 / Portion IVC	Residents of Yau Lai Estate	Noise	Noise nuisance, vibration and suspectedly insufficient mitigation measures in Lam Tin	Y		
430	17-Mar-20	17-Mar-20 / Surcharge Area / C2	Anonymous	Water	Muddy Water at the Surcharge Area	N	The "muddy water" was created by the tug boat's screw propeller. The Contractor claimed the propeller stirred up seabed sediment and generated "muddy water". The details shall be referred to CIR-W13.	Closed
429	10-Mar-20	10-Mar-20 / Site Nearby Park Central	Resident of Park Central	Noise	Noise nuisance in early morning (Mar 2020)	Y	No construction works had been conducted at the time of complaint for C3 and the major works area in C2 was at least 300m away from the complainant. It is believed that the major noise source was coming from ASD's work site. The details shall be referred to CIR-N100	Closed
428	4-Mar-20	Not Specified / Tseung Kwan O	Mr. Lui, Sai Kung District Council	Odour / Noise	Odour and low frequency noise nuisance from construction site	Y	Only minor works had been conducted at the time of complaint. No direct evidence showed that the odour source was originated from C3. The suspected nuisance source is believed to be ASD's works area. The details shall be referred to CIR-C33	Closed
427	1-Mar-20	1-Mar-20 / Portion IVC	Resident of Yung Kai House	Noise	Noise nuisance from Construction Works during Holiday	Y	No construction works were conducted at the concerned locations and no direct evidence showing the complaint is project-related. The details shall be referred to CIR-N99	Closed
426	19-Feb-20	11-Feb-20 / Works area outside TKL Sports Centre	Anonymous	Noise	Noise nuisance from breaking works	Y	Refer to complaint #423 and #424.	Closed
425	18-Feb-20	29-Jan-2020 / Marine works Area	Mr. Chan from Ocean Shore		Noise nuisance from barge in morning	Y	No works had been conducted in the time period of complaint. The noise is believed to be non-project-related. The details shall be referred to CIR-N95.	Closed
424	11-Feb-20	8 and 11-Feb-2020 / Site near TKL Station	Resident of Park Central		Noise nuisance from breaking works	Y	The complaint was valid and the contractor had been operating only 1 breaker at a time. The contractor is suggested to further increase the mitigation measures to reduce impact to the surrounding neighborhood. The details shall be referred to CIR-N97	Closed
423	3-Feb-20	03-Feb-2020 / Site Near TKL Station			Noise nuisance from breaking works	Y		
422	3-Feb-20	2-Feb-20 / Lam Tin Interchange	Resident of Cheuk Lai House, Yau Lai Estate		Noise nuisance suspected to be related to works involving metal hammering on Site near EHC	Y	No construction activities were conducted at the concerned locations during the period of complaint. The Contractor is reminded to keep conducting good site practice and strictly follows the requirements of approved CNP. The details shall be referred to CIR-N98	Closed
421	21-Jan-20	21-Jan-20 / Portion IX	Ocean Shores Residents	Noise	Noise nuisance due to Blasting at midnight	Y	Blasting was conducted around 1:30am due to the vicinity of the Railway protection zone of MTR. The Contractor is reminded to keep the blast door closed during blasting to minimize noise impacts and re-schedule blasting to less sensitive hours as far as practicable. The details shall be referred to CIR-N96.	Closed
420	7-Jan-20	7-Jan-20 / Portion IX	Ocean Shores Residents		Irritating loud noise nuisance from Portion IX (C2)	Y	See complaint #417	Closed
419	7-Jan-20	Sundays before 7-Jan-20 / Tunnel Works	Resident of Hong Pak Court		Noise nuisance from Tunnel Works	Y	See Complaint #416.	Closed
418	7-Jan-20	5-6-Jan-20 / C1 Marine Works Area	Ocean Shores Residents		High-frequency noise during night-time	Y	The high frequency noise was believe to be noise emitted from the marine works area of C1. The details shall be referred to CIR-N94.	Closed

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417	3-Jan-20	2-Jan-20 / Portion IX	Former District Member (Mr. Chan)		Annoying noise emission and inefficient noise mitigation measures	Y	The noise source is believed to come from a breaker and mitigation was insufficient. The Contractor was requested to strictly follow the Noise Mitigation Plan. The details shall be referred to CIR-N93.	Closed
416	29-Dec-19	29-Dec-19 / Non-specific	Resident of Hong Pak Court	Noise	Groundborne Noise from Works area	Y	Project-related with valid CNP. Contractor is reminded to reduce noise emission and prevent breaking and noisy activities during restricted hours. The details shall be referred to CIR-N92.	Closed
415	27-Dec-19	25-Dec-19 / Lam Tin Interchange (Portion IVC)	Resident of Yau Estate	Noise	Noise nuisance from Portion IVC	Y	Non project-related due to maintenance works of East Cross-harbor Tunnel. The details shall be referred to CIR-N91.	Closed
414	24-Dec-19	22-Dec-19 / Lam Tin Interchange (Portion IVC)	Resident of Yau Estate	Noise	Piling noise nuisance near Lam Tin Interchange	Y	Project-related with valid CNP. Contractor is reminded to reduce noise emission and prevent breaking and noisy activities during restricted hours. The details shall be referred to CIR-N91.	Closed
413	24-Dec-19	24-Dec-19 / Portion IX of Contract 2	Resident of Capri & Ocean Shores	Noise	Loud and continuous noise emission from Portion IX	Y	No breaking activity was conducted by the C3. It was believed that C2 was the major noise source and the mitigation measures were insufficient. The details shall be referred to CIR-C32.	Closed
412	19-Dec-19	14-Dec-19 / marine works area	Resident of Ocean Shores	Noise	Noise nuisance from the marine works area	Y	The major construction work was driven by pin piles. The noise emitted due to the construction activities is considered to be reduced to an acceptable level as no NSR falls under the ambit of 300m study area of the work site. Details should be referred to CIR-N90.	Closed
411	2-Dec-19	30-Nov-19 / Construction Sites Outside TKL Sports Center	Resident of Park Central	Air / Noise	Non-effective noise mitigation measures and related dust and noise nuisance	Y	The construction noise created by breaking works are considered non-project related due to the large separation distance between noise source and the Complainant's Location. Major dust emission from the works area next to C3 was recorded. The Contractor is reminded to provide regular watering to dusty works. Details should be referred to CIR-C31.	Closed
410	28-Nov-19	25-Nov-19 / Portion 4C	Anonymous	Noise	Noise nuisance from Lam Tin Works Area and operation hours	Y	Refer to Complaint #408	Closed
409	27-Nov-19	20&27-Nov-19 / Construction Sites near Po Yap Road & Chui Ling Road	Resident of Park Central	Air / Noise	Dust emission due to excavation works and noise nuisance from Piling works	Y	Although noise barrier had been erected and around the breakers, the direct line of sight to the NSRs at Park Central could not be totally blocked. The Contractor is recommended to provide cantilevered noise barrier with noise absorbing materials to minimise noise impact as far as practicable. Details should be referred to CIR-C31.	Closed
408	25-Nov-19	Non-specific (Nov-19) / Portion 4C	Resident of Yau Lai Estate	Noise	Serious Noise Nuisance from Lam Tin Works Area	Y	Despite the Contractor had applied different noise mitigation measures (e.g. semi enclosure and noise barrier). Environmental deficiency was observed during site audit session. The Contractor is recommended to apply alternative noise mitigation measures to improve the situation. The details shall be refer to CIR-N89.	Closed
407	12-Nov-19	Non-specific (Nov-19) / LT Construction Site	Non-specified(Complainant has previously made complaints on LTI)	Operation Hours	Inquiries on operating hours & Noise Nuisance	N	The time of complaint falls under day-time. According to the Contractor and RE, the general starting time of construction works are 08:15 on normal week days. The Contractor had avoid conduct noisy works on morning to minimize noise impacts for the nearby residents. The details shall be refer to CIR-O3	Closed
406	5-Nov-19	5-Nov-19 / Tunnel near TKO	District Council Member (Mr. Chan)	Noise	Noise nuisance from Blasting activities during night-time	Y	No blasting was carried out on that night. The construction activities were conducted inside the tunnel with the blast door closed. The CNP that the Contractor held remained valid during the time of complaint. The details shall be refer to CIR-N88	Closed
405	29-Oct-19	17-Oct-2019 / Marine Works area near Ocean Shore	District Council Member (Mr. Chan)	Noise	Daytime times noise nuisance	Y	The complaint details does not tally up with the information provided with the Contractor and RE. Referring to the Contractor, there was construction works was starting at 09:00. Noise mitigation measures, such as acoustic mats, were applied to minimize noise impact. The details shall be refer to CIR-N87	Closed
404	15-Oct-19	12-Oct-19 / Marine Works area near Ocean Shore	Residents of Ocean Shores	Noise / Working Hours	Noise nuisance due to operation of barge on Saturday early morning	Y	The time of complaint falls within daytime and the major works conducted are dredging and reclamation. The contractor did not require any extra mitigation measures. The contractor had applied sound-proofing mat on the engine floor of the barges and is recommended to strictly follow the requirements of noise mitigation plan. The details shall be refer to CIR-N86	Closed

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403	15-Oct-19	Oct-19 (Not Specified) / C2 Construction Site	Residents of Ocean Shores	Noise / Working Hours	Operation of marine construction works during late hours	Y	The major construction works is trimming works for the rock mount during the time period of complaint. Mitigation measures provided by the Contractor included provision of noise insulating mats to the engine floor of the barges and shorten the work hours by ending construction works on or before 21:00 since early Oct 2019. Details shall be referred to CIR-N85.	Closed
402	10-Oct-19	09-Oct-2019/ Site near TKO CPC	Residents of Ocean Shores	Noise	Noise nuisance of construction works at marine work area during early morning	Y	No construction activity at both the Cavern near the BCMCP Bridge and Platform 1B, including the barge, in particular during the complaint period between 2am and 3am on 9 Oct 2019. Since no works had conducted during the time of complaint, no mitigation measures are required. The details shall be referred to CIR-N84.	Closed
401	5-Oct-19	05-Oct-2019 / C2 Portion IX	District Council Member (Mr. Chan)	Noise	High noise level from works area during daytime	Y	The time period of complaint falls under day-time and therefore the Contractor is required to carry out mitigation measures according to the latest CNMP only. The construction activities had been reviewed and no non-compliance was identified. No Limit Level of Exceedance at daytime was recorded during October 2019. For mitigation measures, the Contractor had set up sound-proofing mats and SlientUp to reduce noise impact. The details shall be refer to CIR-N83.	Closed
400	16-Sep-19	10-Sep-19 / TKO Marine Works Area	District Council Member (Mr. Chan)	Water	Muddy water discharge and deficiency in water quality mitigation measures	N	With accordance to the Contractor and RE, the silt curtains were deployed regarding to SCDP ver. 8 since 10-Sep-19, site inspection on 12-Sep-19 also showed the silt curtains were deployed properly. Despite there are chances of accidental muddy water discharge due to the removal of cofferdam on 13-Sep-19, local silt curtain had been place in order to minimize the unavoidable impact by related loading and unloading of fill materials. No muddy water had been observed outside the silt curtain area. Nevertheless, the Contractor is recommend to expand the coverage of the local silt curtain in order to well-confine the muddy water released from the grab. On top of that, the Contractor shall always follow the SCDP to ensure the minimization of impacts. Details should be referred to CIR-C30.	Closed
399	16-Sep-19	16-Sep-19 (Not Specified) / LT Interchange Portion III	Resident of Bik Lai House, Yau Lai Estate	Noise	Noise emission from the tunnel entrance (Portion III)	Y	No construction works was carried out during the time of complaint. Details should be referred to CIR-N82.	Closed
398	16-Sep-19	13-Sep-19 / Works Area of LT-TKO Tunnel outside Tiu King Leng MTR Station	Anonymous	Air / Water	Dark smoke emission and muddy water discharge from the marine work vessels near shore	N	No dark smoke emission was observed during the site inspection conducted in the week of the complaint. The Contractor has applied an air filtering tank to clean the exhaust from the barge before emission. Details should be referred to CIR-C30.	Closed
397	6-Sep-19	30 Aug-19 / Works area near Ocean Shores	Resident of Ocean Shores	Noise / Working hours	Noise emitted from Barge during Evening times	Y	The unloading works had been reviewed and no limit level of exceedance were recorded during August to early September. Since the period of complaint falls under evening times, no mitigation measures were required by the CNP. Details should be referred to CIR-N81.	Closed
396	6-Sep-19	30 Aug-19 / Works area near Ocean Shores	Resident	Noise	Noise nuisance from LT-TKO Tunnel	Y	The major works conducted were shortcreting, mucking out, maintaining, drilling and unloading. No limit level of exceedance in the restricted hours (19:00-23:00) between late August and early September were recorded. The Contractor is recommended to keep following noise mitigation plan to minimize noise nuisance. Details should be referred to CIR-N80.	Closed
395	6-Sep-19	31 Aug-19 / Works area near Ocean Shores	District Council Member (Mr. Chan)	Noise	Noise Nuisance during evening and night times	Y		Closed
394	6-Sep-19	Not specified (Sep-19) / Works area near Ocean Shores	Anonymous	Noise / Operating Hours	Noise nuisance during Evening & occasionally in Night time	Y		Closed
393	30-Aug-19	30 Aug-19 / Marine works Area	District Council Member (Mr. Chan)	Water	Alleged muddy water discharge	N	High rainfall was recorded during period of complaint, therefore muddy water discharge at outfall from upstream and some surface runoff within the site is expected. However, no major silt curtain deficiency was observed during on-site observation and no leakage of muddy water from the marine works area was observed. Details should be referred to CIR-W12.	Closed
392	29-Aug-19	20-27 Aug-19/ Portion 4C	Resident of Bik Lai House, Yau Lai Estate	Noise	Noise nuisance from the operation of heavy machineries and missing of noise mitigation measures at Portion 4C	Y	A noise insulating cover was erected before the period of complaint, however, due to restricted site condition in the relocated breaking works area, the erection of the cover could not be carried out. Nevertheless, movable noise barriers and local semi-enclosure was adopted for breaking works. Details should be referred to CIR-N79.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
391	26-Aug-19	10-Jul-19 / Construction site near Ocean shore	District Council Member (Mr. Chan)	Noise	Operation of construction works during late hours	Y	1 derrick barge was operated during the period of complaint with valid CNP. Regular maintenance and checking should be conducted for all operating barges. Details should be referred to CIR-N78.	Closed
390	26-Aug-19	31-Jul-19 / Construction site near Ocean shore	District Council Member (Mr. Chan)	Noise	Intermittent noise emitted from collision during night-time	Y	The noise source is suspected to be the collision between cofferdam and its broken part as the cofferdam was found damaged next morning. No construction was conducted at night time of 31 July. The contractor is recommended to maintain and check cofferdam regularly. Details should be referred to CIR-N77.	Closed
389	29-Jul-19	17 to 24-Jul-19 / Marine Construction Site near O King Road	Resident of Ocean Shore	Noise	Noise nuisance from the barge operating in reclamation works area near O King Road during evening times.	Y	1 derrick barge was operated during the period of complaint with valid CNP. Regular maintenance should be provided for all operating barges. Details shall refer to CIR-N76.	Closed
388	12-Jul-19	8-Jul-19 / Construction Site near Ocean Shores	District Council Member (Mr. Chan)	Noise	Noise nuisance and inadequate noise barrier at the construction site near Ocean shore	Y	Although Contractor has adopted a noise mitigation measure of drill rigs at Portion IV near Ocean Shore such as noise barrier with sound insulating fabric, the existing noise barrier in Portion IX and some in Portion IV are not adequate in screening the direct line of sight to Ocean Shore. Details should be referred to CIR-N75.	Closed
387	12-Jul-19	8 to 12-Jul-19 / Portion 4C of C1 Construction Site	Resident of Bik Lai House	Noise	Breaking noise emitted from the operation of 2 PME at Portion 4C during weekday daytime.	Y	Two breakers were operated intermittently at the Portion 4C of C1 construction site during the period of complaint between 07:00 to 19:00. As observed during the site inspection/noise monitoring, movable noise barrier could not completely screen off the direct line-of-sight from PMEs to Yau Lai Estate. Contractor has adopted mitigation measure to minimize the noise impact from breakers including using a noise barrier with noise insulating fabric, adopted a less noisy hydraulic spiting method for breaking works and has been developing a semi-enclosure noise barrier to replace the existing movable noise barrier. Details should be referred to CIR-N74.	Closed
386	10-Jul-19	9 to 10-Jul-19 / Not Specific	District Council Member (Mr. Chan)	Noise	Noise nuisance and disturbance from the TKOLT tunnel construction site involves intermittent noise emitted from collision during night-time.	Y	No construction works was carried out during the time of complaint. Details should be referred to CIR-N73.	Closed
385	4-Jul-19	Late Jun-19 to 4-Jul-19 / Reclamation Area	Resident of Ocean Shore	Noise	The reclamation works continued into the evening during weekdays and works were also operated on Sunday.	Y	See Complaint no 384.	Closed
384	3-Jul-19	3-Jul-19 / Near Ocean Shore	District Council	Noise	The construction site was constantly emitting metallic percussion noise in the early morning.	Y	The concerned metallic percussion noise source was suspected from the collision between the detached sheet pile and the adjacent sheet pile of the broken cofferdam. The detached sheet pile was fixed by re-sealing it to the adjacent sheet pile. Details should be referred to CIR-N72.	Closed
383	29-Jun-19	Jun-19 / Lam Tin Interchange	Resident of Yau Lai Estate, Yung Lai House	Noise	Noise nuisance from construction works during weekday daytime and evening times. Noise barriers was found missing in certain parts of the construction areas.	Y	Some noise mitigation measures were observed during the site inspection including idle equipment were turned off and noise barrier has been erected close to noisy PMEs in the right direction facing Yau Lai Estate. However, the above mitigation measures were not applied to whole construction site such as noise barriers were not placed close enough to the noisy PMEs due to the uneven surface and other inconvenience. Details should be referred to CIR-N71.	Closed
382 (N08/RE/000110 19-19)	17-Jun-19	6-Jun-19 / Cofferdam area	District Council	Air	Dark smoke nuisance from the tug boat inside the cofferdam area.	N	During site audit, no violation of the Air Pollution Control (Smoke) Regulation from the construction site was observed by the ET. Air filter has been replaced on derrick barge to reduce the dark smoke emission upon the receipt of the complaint. The Contractor is recommended to replace the air filters regularly. Details should be referred to CIR-A15.	Closed
381 (N08/RE/000150 98-19)	11-Jun-19	1-Jun-19 / Near cofferdam	District Council	Water	Muddy water discharge from construction site near the cofferdam area on 4 June 19	N	High volume of upstream muddy water was collected due high rainfall according to reports and observation. As a result, the muddy water from upstream was discharged into the Junk Bay via various outfalls in Junk Bay, as observed during the rainstorm events. No sand plume within the cofferdam area and no muddy water discharge at the designated discharge point within the Site was identified during the site inspection and water quality monitoring. Details should be referred to CIR-W11.	Closed
							No oil leakage from mobile crane was observed during the site inspection in June 2019.	

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380	11-Jun-19	6-Jun-19 / Near Tong Yin Street	Resident of Ocean Shore	Air	Odour nuisance from construction site near Tong Yin Street	N	According to the testing reports, all ULSD fuel applied in the PMEs during the construction period contains sulphur content lower than 0.005% by weight, which complied with the Air Pollution Control (Fuel Restriction) Regulations. Details should be referred to CIR-A14.	Closed
379	11-Jun-19	4-Jun-19 / Near cofferdam area	General Public	Water	Discharge of mud water into Junk Bay from TKOLT construction site	N	See Complaint no 381.	Closed
378	11-Jun-19	13-Apr-19 / Near cofferdam area	General Public	Air	Dark smoke nuisance from construction site involves derrick barge operation near cofferdam area (daytime)	N	No violation of the Air Pollution Control (Smoke) Regulation was recorded from the construction site was observed. The contractor was recommended to install carbon filter at smoke exhaust of the barge as a more effective mitigation measures. Details should be referred to CIR-C27.	Closed
377	11-Jun-19	2-Jun-19 / Lam Tin Interchange	General Public	Noise	Complaint about the noise nuisance from Lam Tin Interchange construction site in daytime holiday.	Y	Only drilling works inside the tunnel was conducted during daytime under valid CNP. Groundborne noise is considered as the major factor contributing to the noise nuisance, the Contractor are recommended to re-schedule the drilling works inside the tunnel to less sensitive hours. Details should be referred to CIR-N70.	Closed
376	11-Jun-19	9-Jun-19 / Near Yau Lai Estate	Resident of Yau Lai Estate	Noise	Complaint about the noise nuisance near Yau Lai Estate involves vehicle movement (roller) during morning to 15:00 in holiday.	Y	No works involving roller was involved. Only drilling works inside the tunnel and dismantling of crusher shelter was conducted during Sunday daytime under valid CNP. Groundborne noise is considered as the major factor contributing to the noise nuisance, the Contractor are recommended to re-schedule the drilling works inside the tunnel to less sensitive hours. Details should be referred to CIR-N70.	Closed
375	11-Jun-19	9-Jun-19 / Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complaint about the noise nuisance from Lam Tin Interchange construction site in daytime holiday.	Y	See Complaint no. 376.	Closed
374	4-Jun-19	3-Jun-19 / Near Ping Tin Estate	Resident of Ping Sin House in Ping Tin Estate	Noise	Vibration from the construction of Lam Tin Interchange in evening time at around 20:00	Y	Groundborne noise is considered as the major factor contributing to the noise nuisance. The reverse circulation drilling works may have emitted groundborne noise, however, only 1 unit was used in Portion II. Therefore, blasting is considered as the major cause for the vibration. Details should be referred to CIR-N69.	Closed
373	4-Jun-19	2-Jun-19 / Near ocean Shore	Resident of Ocean Shore	Noise	Complaint about the noise nuisance from the construction site near Ocean Shore and the construction site operation in day time holiday.	Y	No construction activity was conducted at the time of complaint as confirmed by Engineer. Therefore, the noise nuisance was not due to the construction site. Details should be referred to CIR-N68.	Closed
372	4-Jun-19	1-Jun-19 / Near ocean Shore	Resident of Ocean Shore	Others	Complaint about the construction site operation in the early morning on Saturday.	N	See Complaint no. 373.	Closed
371	30-May-19	30-May-19 / Near Ocean Shore	Resident of Ocean Shore	Noise	Noise nuisance from construction site near Ocean Shore during night time.	Y	See Complaint no. 373.	Closed
370 (N08/RE/000150 98-19)	29-May-19	19 & 26-May-19 / Near Ocean Shore	Resident of Ocean Shore	Noise	Noise nuisance about dredging mud and loudspeaker in the construction site near Ocean Shore during daytime holiday.	Y	Noise barriers/ Noise absorptive materials have been used to mitigate the noise generated from the construction works. Only walkie-talkies were used for communication in the construction site. Details should be referred to CIR-N67.	Closed
369	13-May-19	Not specific / Lam Tin interchange	Resident of Yau Lai Estate	Noise	Noise nuisance from the blasting work inside tunnel which involves explosion noise impact during midnight	Y	Contractor has adopted a mitigation measure for reduce the blasting noise impact from the tunnel such as blasting doors and did not conduct blasting works during mid-night blasting since mid-May 2019. Details should be referred to CIR-N66.	Closed
368	19-May-19	19-May-19 / Near cofferdam area	General Public	Noise	Noise nuisance from barge with in cofferdam area in daytime holiday	Y	See Investigation / Mitigation Action for complaint no. 361.	Closed

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367	5-May-19	5-May-19 / Lam Tin Tunnel - TKO entrance	Resident near Lam Tin Tunnel - TKO entrance	Noise & Air	Noise and air nuisance from construction near Lam Tin Tunnel - TKO entrance	Y	The major works during the period of complaint is scaling by breaker on day time holiday (Sunday). The works is compiled with CNP and no air quality action and noise limit level exceedance during the monitoring. Regarding the existing air quality mitigation measures, the water spray for the breaker was insufficient and the dust emission during unloading of dusty materials was observed. As the review of exiting noise mitigation measure, a broken noise SilentMat was found on the hammer of breaker. According to the above observation, Contractor has adopted serval improvement such as conduct a sufficient water spray during breaking and unloading materials, replaced the noise SilentMat of the breaker and placed the noise barrier between PME and NSRs. Details should be referred to CIR-C29.	Closed
366	4-May-19	4-May-19 / Lam Tin Interchange	Resident of Ping Tin Estate	Noise	Noise nuisance from construction of Lam Tin Interchange in daytime.	Y	Regarding the observation during site inspection, the hammer of the breaker was surrounded by a broken noise absorption material and a noise barrier of a driller was placed in the incorrect direction of NSRs. Contractor has improved the above mitigation measures including replaced the noise absorption materials and relocated the noise barrier to facing the NSRs. Details should be referred to CIR-N65.	Closed
365	1-May-19	1-May-19 / Lam Tin Interchange	Resident of Ping Tin Estate	Noise	Noise nuisance from construction of Lam Tin Interchange in daytime.	Y	See investigation / mitigation actions for Complaint No.366	Closed
364	1-May-19	1-May-19 / Lam Tin Interchange	Resident of Ping Tin Estate	Noise	Noise nuisance from construction of Lam Tin Interchange in daytime	Y	See investigation / mitigation actions for Complaint No.366	Closed
363	30-Apr-19	6th – 22th April -19 / Lam Tin Interchange	Resident of Ping Tin Estate	Noise	Noise nuisance from construction of Lam Tin Interchange in daytime and evening time	Y	See investigation / mitigation actions for Complaint No.366	Closed
362 (N08/RE/000133 96-19)	8-May-19	7-May-2019 / Junk Bay	District Council	Noise	Noise nuisance from marine works in the Junk Bay in the night-time (06:45)	Y	No marine works in the Junk Bay was conducted as confirmed by RE. No CCTV footage was recorded during the time of complaint. It was suggested that Contractor should conduct 24 hours CCTV monitoring. Details should be referred to CIR-N64.	Closed
361	7-May-19	28 Apr 2019 / Cofferdam Area	General Public	Noise	Noise nuisance from construction site at cofferdam area in holiday	Y	The reclamation works involves barges during the time of complaints has been compiled with the CNP. As review of existing mitigation measure, the sound proofing canvases for the barges were hanged up. Details should be referred to CIR-N63.	Closed
360	2-May-19	27-04-2019/ Construction in Tong Tin Street	General Public	Noise	The complaint about the noise nuisance from cofferdam area during daytime and evening-time.	Y	The light source was found from the lighting of derrick barge within the cofferdam area and the noise source was found from the barge during filling works. Contractor has adopted The sound proofing canvases for the derrick barge was hanged up but no light mitigation measure. Details should be referred to CIR-C28.	Closed
359	30-Apr-19	30-04-2019/ Near Ocean Shore	Resident of Ocean Shore	Noise	The complaint about the noise nuisance involve percussion noise near Ocean Shore during daytime.	Y		Closed
358	30-Apr-19	27-04-2019/ Near cofferdam area	General Public	Noise	The complaint about the noise nuisance during evening time.	Y		Closed
357	23-Apr-19	20-04-2019/ Near cofferdam area	General Public	Noise	The complaint about the noise nuisance near cofferdam area during daytime.	Y		Closed
356	23-Apr-19	19-04-2019/ Near cofferdam area	General Public	Noise	The complaint about the noise nuisance near cofferdam area during holiday.	Y		Closed
355	17-Apr-19	17-04-2019/ Near cofferdam area	General Public	Noise & light	The complaint about the noise nuisance and light pollution near cofferdam area during evening-time.	Y		Closed
		20 Apr 2019 / Cofferdam Area 19 Apr 2019 / Cofferdam Area			The construction site near O King		The marine reclamation works at the Portion IX in C2 construction site was the major construction activity	

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354	30-Apr-19	15 Apr 2019 / Cofferdam Area 07 Apr 2019 / Cofferdam Area 31 Mar 2019 / Cofferdam Area	Resident of Ocean Shore (Mr. Chan)	Others	Road is operated in holiday during day-time and weekday during night-time.	N	The marine reclamation works at the Portion IX in C2 construction site was the major construction activity during the period of complaints. The concerned reclamation works is compiled with the relevant CNP. Details should be referred to CIR-O2.	Closed
353	13-Apr-19	13-04-2019/Cofferdam Area	Resident of Ocean Shore (Mr. Chan)	Air	According to the complainant, large amount of smoke and exhaust was seen emitting from barges working within the cofferdam	N	See Investigation / Mitigation Action for complaint no. 329.	Closed
352	13-Apr-19	13-04-2019/Cofferdam Area	Resident of Ocean Shore	Noise	The complainant complained about the noise nuisance from the cofferdam area in Tiu Keng Leng during day-time.	Y	The major works during the time of complaints was a crawler crane unloading H piles to the Portion V of C2 construction site. Noise barriers were erected between the crane and NSRs to reduce noise impact. Details should be referred to CIR-N62.	Closed
351	13-Apr-19	13-04-2019/Cofferdam Area	Resident of Ocean Shore	Noise	The complainant complained the noise nuisance from the cofferdam area in Tiu Keng Leng during day-time.	Y		
350	8-Apr-19	07 Apr 2019 / Cofferdam Area in TKO	-	Air & Others	The complainant complained the dark smoke generation and the construction works from the cofferdam area in Tiu Keng Leng during holiday.	N	See Investigation / Mitigation Action for complaint no. 329.	Closed
349	7-Apr-19	07-04-2019/Cofferdam Area	Resident of Ocean Shore	Air	Dark smoke generation from the cofferdam area in Tiu Keng Leng during day-time.	N		Closed
348	2-Apr-19	02 Apr 2019 / LTT-TKO	-	Others	The complainant complained the LTT construction site was working during holiday.	N		Closed
347	1-Apr-19	01 Apr 2019 / Cofferdam Area	Resident of Ocean Shore	Noise	Percussive noise from the cofferdam area in Tiu Keng Leng during day-time.	Y		Closed
346	31-Mar-19	31st March 2019 / Construction of Road P2	District Council	Others	Complaint about the construction site operation of Road P2 in day time holiday	N	A tug boat and a derrick barge were operated for the marine reclamation work within the cofferdam area during the time of complaint. As the review of relevant CNP, no violation was observed. Details should be referred to CIR-O1.	Closed
345	26-Mar-19	26th March 2019 / Construction of Road D4	Resident of Park Central	Noise	Complaint about the noise nuisance in day time.	Y	See Investigation / Mitigation Action for complaint no. 329.	Closed
344	28-Mar-19	26th March 2019 / Construction of Road P2	District Council	Noise	Complaint letter received regarding noise nuisance and dark smoke generation from the marine barges	Y	See Investigation / Mitigation Action for complaint no. 378.	Closed
343	25-Mar-19	25th March 2019 / Construction of Road D4	Resident of Park Central	Noise	Complaint about the noise nuisance sound like a breaking works in day time.	Y	See Investigation / Mitigation Action for complaint no. 329.	Closed

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342	25-Mar-19	24th March 2019 / Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance from the construction of Lam Tin Interchange in day time holiday (Sunday). The noise monitoring was conducted in Hong Nga Court by staff after the complaint and the noise level is result in acceptable level, but the complainant replied that the noise monitoring is meaningless and the noise nuisance is not acceptable for her.	Y	See Investigation / Mitigation Action for complaint no. 330.	Closed
341	24-Mar-19	24th March 2019 / Lam Tin Interchange	Management Section of Hong Nga Court	Noise	Complaint about the noise nuisance from Lam Tin Tunnel construction works in day time.	Y		Closed
340	24-Mar-19	24th March 2019 / Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance from the construction site day time holiday (Sunday).	Y		Closed
339	21-Mar-19	21st March 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the construction noise nuisance involving percussive noise in early morning (07:00)	Y		Closed
338	21-Mar-19	21st March 2019 / Construction of Lam Tin Interchange	Resident of Ocean Shore	Noise	Construction noise	Y	See Investigation / Mitigation Action for complaint no. 323.	Closed
337	20-Mar-19	19th March 2019 / Construction of Road D4 and Footbridge between Tiu Keng Leng Sport Centre and Park Central	Resident of Park Central	Noise	Complaint about the noise nuisance from the construction vehicle near Park Central in night time.	Y	See Investigation / Mitigation Action for complaint no. 329.	Closed
336	20-Mar-19	20th March 2019 / Construction of Road P2	Resident of Park Central	Noise & Pest	Complaint about the noise and pest nuisance from the construction site near Park Central in evening time.	Y		Closed
335	19-Mar-19	19th March 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Construction noise nuisance from reclamation works near the TKO-LTT reclamation site during the evening time (19:00-23:00).	Y	See Investigation / Mitigation Action for complaint no. 323.	Closed
334	19-Mar-19	19th March 2019 / Construction of Road P2	District Council	Noise	Construction noise nuisance from the TKO-LTT reclamation site during evening time (after 19:00).	Y		Closed
333	19-Mar-19	18th - 19th March 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Construction noise nuisance from construction noise in evening time (around 20:30).	Y		Closed
332	18-Mar-19	18th March 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complaint about the noise nuisance during day time, evening time and night time.	Y	The construction activities in the complaint dates are complied with CNP. No noise limited level exceedance was recorded. During the site inspection, no noise barriers were erected between noisy PMEs and NSRs at LTI. Regarding the observation in the inspection, Contractor has adopted an improvement such as placed the noise barriers between the PMEs and NSPs to reduce noise nuisance. Details should be referred to CIR-N61.	Closed
331	18-Mar-19	18th March 2019 / Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complaint about the noise nuisance in night time and the past few days. (Before 07:00)	Y		Closed

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330	17-Mar-19	17th March 2019 / Construction of Lam Tin Interchange	General Public	Noise	Complaint about the noise nuisance from in night time holiday.	Y		Closed
329	15-Mar-19	15th March 2019 / Construction of Road D4	Resident of Park Central	Noise & Air	Complaint about the noise from the construction works and the odour nuisance involves engine oil from construction machine	Y	The construction activities in the complaint dates are compiled with the CNMP. No noise and air quality limit level exceedance were recorded. Contractor had implemented the mitigation measures for the noise and odour nuisances including acoustic mat was erected between the PME and NSR, ultra-low sulphur diesel was applied as fuel oil in PME and general refuses were disposed properly. Details should be referred to CIR-C26.	Closed
328	14-Mar-19	9th March 2019 / Construction Site of Footbridge between Tiu Keng Leng Sport Centre and Park Central	Resident of Park Central	Noise	Complaint about the noise nuisance involve drilling work in the day time (08:00).	Y	A formation works was conducted in 7 am to 7pm on 9 Mar 2019. No noise limit level exceedance was recorded in the nearest noise monitoring result. However, there was no any adoption of mitigation measure to minimize the noise nuisance from the site. As response the received complaint, the contractor should place the noise barrier between the PMEs and NSR. Details should be referred to CIR-N58.	Closed
327	13-Mar-19	13th March 2019 / Construction of Lam Tin Interchange	Resident of Bik Lai House	Noise	Noise nuisance suspected from the construction works involving chiseling during evening time (22:07).	Y	A handing processed rock at Lam Tin Interchange was conducted on the complaint date in 7 pm to 11 pm involving dump truck and excavator which construction activities was compiled with the CNP. No noise limit level exceedance was record in the evening time monitoring. However, the noise barrier was not placed in the direction of the Yau Lai Estate during breaking works, the contractor had implemented a mitigation measure such as placed the noise barrier to reduce noise level from the breaker but the noise barrier was far from the concerned breaker. Details should be referred to CIR-N59.	Closed
326	13-Mar-19	13th March 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Noise nuisance suspected from marine works near Ocean Shores in the day time (16:30)	Y	See Investigation / Mitigation Action for complaint no. 322.	Closed
325	9-Mar-19	9th March 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance involve machine and percussive noise in night time (02:00 -03:00).	Y	Only drilling works were conducted inside the tunnel in early morning under valid CNP. Groundborne noise is considered as the factor that contributes to the noise nuisance. The Contractor is recommended to reschedule drilling works to less sensitive hours. Details should be referred to CIR-N56.	Closed
324	7-Mar-19	7th March 2019 / Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complaint about the noise nuisance involving chiseling noise from the construction site near Hong Pak Court during day time and evening time in the past few months.	Y	Only drilling works were conducted inside the tunnel in early morning and daytime under valid CNP. Groundborne noise is considered as the factor that contributes to the noise nuisance. The Contractor is recommended to reschedule drilling works to less sensitive hours. Details should be referred to CIR-N56.	Closed
323 (EPD-N08/RE/000065 23-19)	4-Mar-19	4th March 2019/ Cofferdam Area	Resident of Ocean Shore	Noise	Construction noise (Evening time)	Y	Only 1 derrick barge and a tug boat was used in the evening time under valid CNP. No Limit Level Exceedances were recorded at Station CM6(A) during evening time. Acoustic mat should be used to screen the engine of the barge to reduce the noise nuisance from the reclamation works. Lubricants should be applied to the barge to reduce the noise emission during barge movement.	Closed
322	13-Mar-19	1st March 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Noise nuisance suspected from a yellow excavator near Ocean Shores in day time (15:44).	Y	No noise limit level exceedance was recorded and the number of operating PMEs complied with the CNMP. The sound proofing canvases were not always adopted as a mitigation measure to screen the noise emitted from the engine of the barge. Contractor should adopt the aforementioned mitigation measures as far as practicable. The contractor was also be recommended to enhance the mitigation measure including frequently checking the noise barriers/sound proofing canvases, frequent checking and repair the gaps or broken acoustic sheets and continue to strictly follow the requirements in the approved CNMP.	Closed
321	28-Feb-19	28th February 2019 / Construction of Lam Tin Interchange	Management Section of Yau Lai Estate	Noise	Construction noise (Night time)	Y	Only drilling works were conducted inside the tunnel in early morning under valid CNP. Groundborne noise is considered as the factor that contributes to the noise nuisance. The Contractor is recommended to reschedule drilling works to less sensitive hours. Details should be referred to CIR-N55.	Closed

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320	22-Feb-19	22nd February 2019 / Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complaint about the noise nuisance involving percussive noise in early morning (Day time). Complainant said the construction should be operated after 08:00.	Y	See Investigation / Mitigation Action for complaint no. 313.	Closed
319	21-Feb-19	21st February 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance involving percussive noise in night time	Y		Closed
318	21-Feb-19	21st February 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complaint about the noise nuisance involving percussive noise from the construction in night time	Y		Closed
317	25-Feb-19	23th February 2019 / Construction of Road P2	Resident in O King Road	Air	Complained about the odour nuisance of petroleum smell	N	See Investigation/ Mitigation Action on Complaint no.294. Details should be referred to CIR-A12.	Closed
316	18-Feb-19	18th February 2019 / Construction of Road P2	Resident in O King Road	Air	Complaint about the dark smoke and odour nuisances	N		Closed
315	17-Feb-19	15th February 2019 / Construction of Lam Tin Interchange, Road P2 and Tseung Kwan O Interchange	General Public	Noise	Complained about construction noise (Daytime)	Y	The metal wire used for anchoring the barge inside the cofferdam area are the source for the noise nuisance. Ropes were used to replace metal wire to reduce noise nuisance from metal collision while mooring boats. Details should be referred to CIR-N54.	Closed
314	17-Feb-19	16th February 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Air	Dust nuisance suspected from the construction works and absence of water spraying near Lam Tin Interchange in daytime.	N	No Air Quality action level or limit level exceedance during the monitoring conducted by ETL. Contractor had implemented mitigation measure to reduce and prevent dust emission including conducted water sprays and covered the cement bags. Details should be referred to CIR-A13.	Closed
313	17-Feb-19	17th February 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Construction noise nuisance from the drilling and breaking works at Branch Tunnel in the morning (Day time)	Y	Breaking and drilling works were conducted during the time of complaint. The breakers were often seen wrapped with acoustic mat, however, they are easily damaged during the breaking works. Noise barrier are more effective in reducing the noise nuisance than the acoustic mat, but the erection of noise barrier are not often adopted properly to screen the noise from the NSR due to the additional works involved and the landform on site. Groundborne noise could also be a factor contributing to noise nuisance. Details should be referred to CIR-N53.	Closed
312	16-Feb-19	16th February 2019 / Construction of Lam Tin Interchange	District Council	Noise	Complained about the explosion noise (Daytime)	Y	No exceedances were recorded and recommendation were made to further enhance the mitigation measures, such as regularly and reviewing the noise control activities that are being carried out on site regularly to ensure compliance with statutory requirement, provide training for the workers to prevent unnecessary noise disturbance and frequently check and maintain the absorptive lining adhered on blasting doors on a regular basis.	Closed
311	15-Feb-19	15th February 2019 / Construction of Lam Tin Interchange	Public	Noise	Complained about the explosion noise (Daytime)	Y	See Investigation / Mitigation Action for complaint no. 312.	Closed
310	14-Feb-19	14th February 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Construction noise nuisance about the rock handling work at LTI (Daytime)	Y	Dump truck and excavator was used to transfer crushed rocks from the crusher with valid CNP. Additional noise barrier was added at the site boundary near Shun Lai house, Yau Lai Estate to reduce the direct-line of sight from the NSRs to the site. Details should be referred to the CIR-N51.	Closed
309	13-Feb-19	13th February 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Construction noise nuisance about the rock handling work at LTI (evening time)	Y		Closed
308	13-Feb-19	1th - 13th February 2019 / Construction of works at the TKO-Lam Tin tunnel	Management Section of Kwong Tin Estate	Noise	Complaint about construction noise (Night time)	Y	See Investigation/ Mitigation Action on Complaint no.302. Details should be referred to CIR-N48.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
307	13-Feb-19	13th February 2019 / Construction at Tsung Kwan O (C1)	Resident of Ocean Shore	Noise	The complaint about the noise nuisance in day time	Y	Noise nuisance was originated from the beeping noise emitted during vehicle reversing of the loader. The total length of beeping noise should be less than 5 mins. The reverse alarm system is a necessary safety measure that cannot be revoked. Details should be referred to CIR-N50.	Closed
306	13-Feb-19	13th February 2019 / Construction of works at the TKO-Lam Tin tunnel	Resident of Hong Nga Court	Noise	Noise nuisance suspected from the construction works involving chiseling noise in night time	Y	See Investigation/ Mitigation Action on Complaint no.302. Details should be referred to CIR-N48.	Closed
305	12-Feb-19	12th February 2019 / Construction of works at the TKO-Lam Tin tunnel	Resident of Hong Nga Court	Noise	Noise nuisance suspected from the construction works involving chiseling noise in night time.	Y		Closed
304	8-Feb-19	8th February 2019 / Construction of Road P2 and Associated Works	Resident of Ocean Shore	Noise	Noise nuisance suspected from marine works near Ocean Shores in the day time	Y	There were two construction activities in the site including dredging and trimming in day time on 8 Feb 2019. Details should be referred to CIR-N49.	Closed
303	2-Feb-19	27th January - 2nd February 2019 / Construction of works at the TKO-Lam Tin tunnel	Resident of Ping Tin Estate	Noise	Noise nuisance suspected from the construction works involving chiseling noise during day time, evening time and night time.	Y	Project-related. The following recommendations were made to further enhance the mitigation measures: <input type="checkbox"/> Frequent checking and repair the gaps or broken acoustic sheets; <input type="checkbox"/> Replace any broken SilentMat for wrapping the breaker head; <input type="checkbox"/> To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; <input type="checkbox"/> The deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receivers; <input type="checkbox"/> To continue to strictly follow the requirements in the approved CNMP; <input type="checkbox"/> To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer; and <input type="checkbox"/> Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed
302	2-Feb-19	27th January - 2nd February 2019 / Construction of works at the TKO-Lam Tin tunnel	Resident of Hong Pak Court	Noise	Noise nuisance suspected from the construction works involving chiseling noise during day time	Y		Closed
301	31 Jan 2019	27th - 31th January 2019 / Construction of Lam Tin Interchange	Management Section of Hong Nga Court	Noise	Noise nuisance suspected from the	Y	See Investigation/ Mitigation Action on Complaint no.290. Details should be referred to CIR-N45.	Closed
300	30 Jan 2019	30th January 2019 / Construction Site of Footbridge between Tiu Keng Leng Sport Centre and Park Central	Resident of Park Central	Noise	Beeping Noise nuisance suspected from the construction works involving mobile crane	Y	See investigation / Mitigation Action for complaint no. 296. Details should be referred to CIR-N47.	Closed
299	30 Jan 2019	27th - 29th January 2019 / Construction Site of Footbridge between Tiu Keng Leng Sport Centre and Park Central	Resident of Park Central	Noise	Beeping Noise nuisance suspected from the construction works involving mobile crane and also suspected from elevation platform	Y	See investigation / Mitigation Action for complaint no. 296. Details should be referred to CIR-N47.	Closed
298	30 Jan 2019	Not specific / Near Po Shun Road	Resident of Park Central	Noise & Air Quality	The dust generation and noise nuisance from the construction site near Po Shun Road	Y	There were several construction activities in the site including the removal of steel mould & scaffolding of bridge deck, erection of scaffolding for staircase and construction of Pour 1 of main deck (GL4-5) during time of complaint. Details should be referred to CIR-C25.	Closed
297	30 Jan 2019	27 th - 30th January 2019 / Construction works at TKO-Lam Tin tunnel	Resident of Hong Nga Court	Noise	Noise nuisance suspected from the construction involving chiselling works	Y	See Investigation/ Mitigation Action on Complaint no.290. Details should be referred to CIR-N45.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
296	29 Jan 2019	27th - 29th January 2019 / Construction Site of Footbridge near Tiu Keng Leng Sport Centre.	Resident of Park Central	Noise	Beeping Noise nuisance suspected from the mobile crane at the Footbridge near Park Central Block 6	Y	Project-related. The following recommendations were made to further enhance the mitigation measures: <input type="checkbox"/> To arrange a signalman instead of mobile crane reversing signal for minimize the beeping noise disturbance; <input type="checkbox"/> Frequent checking and repair the operating PME; <input type="checkbox"/> The deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receivers; <input type="checkbox"/> To continue to strictly follow the requirements in the approved CNMP; <input type="checkbox"/> To ensure noise barrier and sound proofing canvases wrapped on PME are intact and in good condition.	Closed
295	29 Jan 2019	29th January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complaint about the noise nuisance from the steel cable wire for anchoring between barge and pier	Y	There was a salvage works for the sunken barge (CS306) in a whole day on 27 Jan, 12 am to 3 pm on 28 Jan and 11:40 am on 29 Jan 2019. Details should be referred to CIR-N46.	Closed
294	29 Jan 2019	29th January 2019 / Construction of Road P2	Resident in O King Road	Air Quality	Complaint about the dark smoke and odour nuisances from barge.	Y	The sulphur content percentage of the adopted diesel fuel was lower than 0.05% which is compiled with the Hong Kong Air Pollution Control (Marine Light Diesel) Regulation, therefore the odour problem should be minimised. Smoke filtering tanks were adopted on deck level of derrick barges to reduce emission of dark smoke and exhaust smell. The situation has improved after the filter has been replaced. Details should be referred to CIR-A12.	Closed
293 (EPD-K15/RE/000032 91-19)	29 Jan 2019	29th January 2019 / Construction of Lam Tin Interchange	Cha Kwo Ling Tsuen	Noise & Air Quality	Complained about construction noise & dust (Day & Night time)	Y	See investigation / Mitigation Action for complaint no. 270. Details should be referred to CIR-C29.	Closed
292	29 Jan 2019	29th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from breaking work.	Y	Project-related. The following recommendations were made to further enhance the mitigation measures: <input type="checkbox"/> To arrange a signalman instead of mobile crane reversing signal for minimize the beeping noise disturbance;	Closed
291	29 Jan 2019	29th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complained about the construction noise from breaking work.	Y	<input type="checkbox"/> Frequent checking and repair the operating PME; <input type="checkbox"/> The deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receivers;	Closed
290	29 Jan 2019	29th January 2019 / Construction of Lam Tin Interchange	District Council	Noise	Complained about the construction noise from Tunnel Works	Y	<input type="checkbox"/> To continue to strictly follow the requirements in the approved CNMP; <input type="checkbox"/> To ensure noise barrier and sound proofing canvases wrapped on PME are intact and in good condition.	Closed
289 (EPD-N08/RE/000008 59-19)	24 Jan 2019	Early December 2018 -24 Jan-2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from Tunnel Works	Y	See Investigation/ Mitigation Action on Complaint no.288. Details should be referred to CIR-N44.	Closed
288	18 Jan 2019	18th January 2019 (Non-specific) / Construction of Road P2	Public	Noise	Complained about the construction noise from Tunnel Works	Y	No major construction works at the concerned night time. There was only salvage operation carried out in 11 pm to 12 pm on 17 Jan 2019. No violation of CNP nor Noise Control Ordinance is found in this regard. Details should be referred to CIR-N44.	Closed
287	17 Jan 2019	17th January 2019 / Construction of Lam Tin Interchange	Resident of Yung Lai House	Noise	Complained about the construction noise from Kam Tin Interchange.	Y	Project-related. The following recommendations are made to further enhance the mitigation measures: <input type="checkbox"/> To regularly check and review the noise control activities that are being carried out on site to ensure compliance with statutory requirement. <input type="checkbox"/> Machines may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. <input type="checkbox"/> To provide training for the workers to prevent unnecessary noise disturbance. <input type="checkbox"/> To provide cantilever barrier to screen the construction noise from the NSRs	Closed
286	17 Jan 2019	17th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site near the Park Central in day time	N	See Investigation/ Mitigation Action on Complaint no. 285. The concerned air compressor has been removed on 16 th Jan 2019. Details should be referred to CIR-N41.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
285	17 Jan 2019	17th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from an air blower/fan with generator near Tiu Keng Leng Sport Centre and Park Central.	N	The concerned air compressor was removed from the construction site since 16 January 2019 afternoon, but the high frequency noise nuisance complaints were received on 17 January 2019. According to the CM8(A) noise monitoring record by environmental team, the other noise source from construction site are beeping noise of the reverse alarm system of the plant. Therefore, the high frequency noise nuisance is considered project related after 16 January 2019. Details should be referred to CIR-N41.	Closed
284	16 Jan 2019	16th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from an air compressor near Tiu Keng Leng Sport Centre and Park Central.	N	See Investigation/ Mitigation Action on Complaint no. 272. Additional noise barrier was erected around the said air compressor. Details should be referred to CIR-N41.	Closed
283	15 Jan 2019	15th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from an air compressor near Tiu Keng Leng Sport Centre and Park Central.	N	See Investigation/ Mitigation Action on Complaint no. 272. Additional noise barrier was erected around the said air compressor. Details should be referred to CIR-N41.	Closed
282	15 Jan 2019	15th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from an air compressor near Tiu Keng Leng Sport Centre and Park Central.	N	See Investigation/ Mitigation Action on Complaint no. 272. Additional noise barrier was erected around the said air compressor. Details should be referred to CIR-N41.	Closed
281	15 Jan 2019	15th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site near Chui Ling Road roundabout and Tiu Keng Leng Sport Centre in day time.	N	See Investigation/ Mitigation Action on Complaint no. 272. Additional noise barrier was erected around the said air compressor. Details should be referred to CIR-N41.	Closed
280	14 Jan 2019	14th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site near Chui Ling Road roundabout and Tiu Keng Leng Sport Centre in day time.	N	See Investigation/ Mitigation Action on Complaint no. 272. Details should be referred to CIR-N41.	Closed
279	14 Jan 2019	14th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site near Tiu Keng Leng Sport Centre in day time Saturday and Holiday (Sunday).	N	See Investigation/ Mitigation Action on Complaint no. 272. Details should be referred to CIR-N41.	Closed
278	12 Jan 2019	12th January 2019 / Construction of Road D4	Resident of Park Central	Noise	High frequency machine noise nuisance involving air compressor from the construction site between Tiu Keng Leng Sport Centre and Park Central in day time	Y	See Investigation/ Mitigation Action on Complaint no. 272. Details should be referred to CIR-N41.	Closed
277	12 Jan 2019	12th January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the noise from breaking activities.	N	See investigation/ Mitigation Action on Complaint no. 264. Details should be referred to N39.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
276	11 - 12 January 2019	11th - 12th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	The complaints are considered as project-related. The following recommendations were made to further enhance the mitigation measures: <input type="checkbox"/> Frequent checking and repair the gaps or broken acoustic sheets; <input type="checkbox"/> Replace any broken SilentMat for wrapping the breaker head; <input type="checkbox"/> To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; <input type="checkbox"/> The deployment of Cantilever noise barrier <input type="checkbox"/> To continue to strictly follow the requirements in the relevant CNP. <input type="checkbox"/> To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer <input type="checkbox"/> Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP. Details can be referred to CIR-N40.	Closed
275	11 Jan 2019	11th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the construction noise from a crane near footbridge between Tiu Keng Leng Sport Centre and Park Central	Y	See Investigation/ Mitigation Action on Complaint no. 272.	Closed
274 (EPD-N08/RE/000012 34-19)	11 Jan 2019	11th January 2019 / Construction of Road D4	Public	Noise	Complaint about the high frequency machine noise nuisance from the construction site of footbridge between Tiu Keng Leng Sport Centre and park Central.	Y	No high-frequency noise was detected near the complaint location, however, the noise similar to description was detected within the renovation works inside Park Central. Details should be referred to complaint no. 272 and CIR-N41.	Closed
273	10 Jan 2019	10th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	The complaints are considered as project-related. The following recommendations were made to further enhance the mitigation measures: <input type="checkbox"/> Frequent checking and repair the gaps or broken acoustic sheets; <input type="checkbox"/> Replace any broken SilentMat for wrapping the breaker head; <input type="checkbox"/> To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; <input type="checkbox"/> The deployment of Cantilever noise barrier <input type="checkbox"/> To continue to strictly follow the requirements in the relevant CNP. <input type="checkbox"/> To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer <input type="checkbox"/> Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed
272	8 Jan 2019	8th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complaint about the high frequency machine noise nuisance from the construction site near Park Central in day time.	Y	High frequency noise emitted from an air compressor was suspected. Noise barrier was seen erected. Noise barrier using material with higher absorption coefficient such as mineral wool is recommended. Details should be referred to CIR-N41.	Closed
271	8 Jan 2019	8th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	The complaints are considered as project-related. The following recommendations were made to further enhance the mitigation measures: <input type="checkbox"/> Frequent checking and repair the gaps or broken acoustic sheets; <input type="checkbox"/> Replace any broken SilentMat for wrapping the breaker head; <input type="checkbox"/> To adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; <input type="checkbox"/> The deployment of Cantilever noise barrier <input type="checkbox"/> To continue to strictly follow the requirements in the relevant CNP. <input type="checkbox"/> To conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer <input type="checkbox"/> Engineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
270 (EPD-K15/RE/000006 91-19)	7 Jan 2019	7th January 2019 / Construction of Lam Tin Interchange	Cha Kwo Ling Tsuen	Noise & Air Quality	Complained about construction noise & dust (Day & Night-time)	Y	Regular noise monitoring results for day time and night time show full compliance of the noise criteria. Air quality monitoring result in all stations show that no adverse air quality impact has been brought about to the nearby sensitive receivers during the time of complain. During Site audit, damaged acoustic material on the breaker was observed. Watering was provided at during rock breaking to avoid dust generation. The Contractor was reminded to deploy noise barrier to screen the line-of-sight from sensitive receiver.	Closed
269	7 Jan 2019	7th January 2019 / Construction of Road D4	Resident of Park Central	Noise	Complained about the night time construction noise near Park Central.	Y	No noticeable high frequency noise was detected from the air compressor and noise barrier was seen erected in the line-of-sight from the NSR to the Air compressor. Refer to CIR-41 for details.	Closed
268	7 Jan 2019	7th January 2019 / Construction of Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the construction noise at Lam Tin Interchange.	Y	No exceedances were record at the nearest monitoring station. The following recommendation were made to further enhance the mitigation measure: Y requent checking and repair the gaps or broken acoustic sheets; Y replace any broken Silent Mat for wrapping the breaker head; Y o adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; Y he deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receiver; Y o continue to strictly follow the requirements in the relevant CNP; Y o conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer; and Y ngineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed
267	7 Jan 2019	7th January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from breaking activities.	Y	Refer to Investigation/ Mitigation Action on Complaint no. 264. Details should be referred to N39.	Closed
266	7 Jan 2019	7th January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from breaking activities.	Y	No exceedances were recorded at the nearest monitoring station, however, the approved location for noise monitoring was located at the podium of Ocean Shores. Due to inaccessibility to private unit, it is not possible to perform monitoring at higher floor. ET will keep approaching Ocean Shore Management Office for impact noise monitoring at higher floor. The recommendations for Contractor is as follows: . only well-maintained plant on-site and plant should be serviced regularly during the construction program; . Plants known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby noise sensitive receivers; Machines and plants that may be in intermittent use should be shut down between works periods or should be throttled down to minimum.	Closed
265	7 Jan 2019	7th January 2019 / Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	No exceedances were record at the nearest monitoring station. The following recommendation were made to further enhance the mitigation measure: Y requent checking and repair the gaps or broken acoustic sheets; Y replace any broken Silent Mat for wrapping the breaker head; Y o adopt Cantilever noise barriers at Lam Tin Interchange to screen noise effectively; Y he deployment of Cantilever noise barrier should screen the line-of-sight from sensitive receiver; Y o continue to strictly follow the requirements in the relevant CNP; Y o conduct an ad hoc ground-borne noise monitoring with the coordination of the Engineer; and Y ngineer should monitor the plant and machine to ensure construction activities are in compliance of CNP.	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
264	2nd January 2019	2nd January 2019 / Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from breaking activities.	Y	No noise limit level exceedance was recorded at the noise monitoring stations near ocean shores. The contractor has applied lubricants to the joint of the excavators to dampen the noise emitted from the PMEs. The contractor is recommended to use noise barriers to screen the PMEs from the NSRs as per the Noise mitigation plan.	Closed
263 (EPD-)	1st January 2019	31st December 2018 / Coastal near TKO cemetery	General Public	Water	Complained concerning oil leakage/ on the sea surface near the sunken barge at C2 site.	N	Oil leakage happened due to the derrick lighter was submerged to the sea within the cofferdam. As the oil leakage was found outside the cofferdam during site inspection, there was a gap in the cofferdam. The oil leakage was cleaned up and the floating oil absorber has been used to surround the cofferdam by Contractor. The Contractor are reminded to 1) regular check if the site vessels and cofferdam are in good-condition; 2) To regular monitor the operation of any activities in the cofferdam area; 3) To implement the proposed site vessels safety and the emergency responses including clearance measures. Details of the investigation should be referred to CIR-W10.	Closed
262	30 Dec 2018	26 th December 2018/ Construction of Lam Tin Interchange	Resident of Hong Pak Court	Noise	Complained about the construction noise from tunnel works of Lam Tin Interchange.	Y	Refer to investigation for complaint no. 254	Closed
261	26 Dec 2018	26 th December 2018/ Construction of Lam Tin Interchange	Management Section of Hong Nga Court	Noise	Complained about the construction noise from tunnel works of Lam Tin Interchange.	Y	Refer to investigation for complaint no. 254	Closed
260	26 Dec 2018	26 th December 2018/ Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise of Lam Tin Interchange.	Y	Refer to investigation for complaint no. 254	Closed
259	26 Dec 2018	26 th December 2018/ Construction of Lam Tin Interchange	Management Section of Hong Nga Court	Noise	Complained about the construction noise of Lam Tin Interchange.	Y	Refer to investigation for complaint no. 254	Closed
258	18 Dec 2018	18 th December 2018/ Construction of Lam Tin Interchange	Engineering Section of Ocean Shore	Noise	Complained about the construction noise from the marine works.	Y	There was no major construction works at the concerned area during the time of complaint and confirmed by the Resident Engineer. Steel cable wire for anchoring between barge and pier is considered as a possible noise source. The complaint is considered project related.	Closed
258								
258								
258							<u>Mitigation measures:</u>	
258							Cable wire for anchoring between barge and pier has been replaced by rope between 27 Dec and 2 Jan to reduce noise impact. In addition, other good site practices recommended in the "Implementation Schedule of Proposed Mitigation Measures" of EM&A Manual and the approved CNMP of this Contract had been implemented by the Contractor, including the following:	
258							• Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program;	
258							• Plants known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby noise sensitive receivers;	
258	• Machines and plants that may be in intermittent use should be shut down between works periods or should be throttled down to minimum.							
257	18 Dec 2018	18 th December 2018/ Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from the marine works.	Y	There was no major construction works at the concerned area during the time of complaint and confirmed by the Resident Engineer. Steel cable wire for anchoring between barge and pier is considered as a possible noise source. The Contractor has replaced the cable wire for anchoring between barge and pier with ropes between 27 Dec and 2 Jan to reduce noise impact.	Closed
256	17 Dec 2018	15 th December 2018/ Construction of Road P2	Resident of Ocean Shore	Noise	Complained about the construction noise from breaking and piling activities	N	No exceedance was recorded in the noise monitoring result. The number of PME operated in LTI was consistent with the proposed Construction Noise mitigation Plan (CNMP) The following recommendations were made for the Contractor to enhance the mitigation measures: • To frequently check and repair operating PME if any loosen or worn parts of the equipment to reduce excessive noise disturbance; • Noise barriers should be designed and erected around the noise sources to block the direct line-of-sight from the NSR as per the CNMP;	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
							To ensure all erected noise barriers and sound proofing canvases wrapped on PME are intact and in good condition.	
254	16 Dec 2018	16 th December 2018/ Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	ÿ The night-time works were only conducted inside the tunnels with valid CNP. The noise nuisances are not considered as air-borne in nature, but ground-borne noise. 2.17 In order to confirm the possible ground-borne nature of the noise nuisances for complaints summarized in this report, CEDD has engaged the environmental team to conduct ad hoc ground-borne noise monitoring with the coordination of the Engineer. The findings will be provided in a separate report for the ad hoc monitoring.	Closed
253	15 Dec 2018	15 th December 2018/ Construction of Lam Tin Interchange	Resident of Hong Nga Court	Noise	Complained about the construction noise from Tunnel Works	Y	Refer to the investigation for complaint no. 254	Closed
252	30 Nov 2018	30 th November 2018/ Construction of Road D4	Resident of Park Central	Noise & Air	Complained about the construction noise and dust resuspension in Road D4.	Y	The number of PMEs operated on site and on-time percentage from 19 to 30 November complied with the CNMP, thus, no violation was identified. Based on the noise and air monitoring results in November 2018, no Limit Level Exceedance was recorded. Mitigation Measures ÿ A more effective acoustic barrier was erected between the drill rig and Park Central. ÿ Frequent water spraying along the Po Yap Road for eight times a day, Stockpile are covered with impervious material to avoid dust resuspension	Closed
251	28 Nov 2018	27 th November 2018/ Construction of TKO portal	Public	Noise	Complained about the construction noise from the marine works.	Y	The complaint lodged on 25 th November 2018 is considered as non-project related, as no works was conducted on that day.	Closed
The complaint on 27th November 2018 is considered project related. The contractor is reminded to 1) frequently check and repair operating PME if any loosen or worn parts of the								
equipment to reduce excessive noise disturbance; 2) Ensure no further use of PA system for marine works.								
250	26 Nov 2018	26 th November 2018/ Public sea in TKO	Resident of Ocean Shore	Noise	Complained about the noise nuisance from the operation of derrick barge on Sunday.	Y	Refer to the investigation for complaint no. 251	Closed
249	25 Nov 2018	20 th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance from the Excavators in LTI on Sunday morning.	Y	Refer to the investigation for complaint no. 251	Closed
248	20 Nov 2018	20 th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance during transfer of material in evening time at LTI	Y	Regular noise monitoring results for restricted and non-restricted hours show full compliance of the noise criteria (night-time noise exceedance is considered non-project related). The contractor is reminded to adopt cantilever noise barriers at Lam Tin Interchange to screen noise effectively by screening the line-of-sight from sensitive receivers	Closed
247	20 Nov 2018	19 th November 2018/ Lam Tin Interchange	Public	Noise	Complained about the noise nuisance from rock dropping during evening time	Y	Refer to the investigation for complaint no. 248	Closed
246	19 Nov 2018	19 th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance from dump truck in evening time	Y	Refer to the investigation for complaint no. 248	Closed
245	8 Nov 2018	8 th November 2018/ Lam Tin Interchange	Public	Noise	Complained about construction noise during night time from LTI	Y	Refer to the investigation for complaint no. 248	Closed
243	8 Nov 2018	8 th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the construction noise during evening time from LTI.	Y	Refer to the investigation for complaint no. 248	Closed
242	7 Nov 2018	7 th November 2018/ Lam Tin Interchange	Public	Noise	Complained about the construction noise and dust nuisance.	Y	Refer to the investigation for complaint no. 248	Closed

Complaint No.	Received Date	Date/Location of Complaint	Complainant	Nature	Details of Complaint	Noise Action Level Exceedance	Investigation/ Mitigation Action	Status
241	6 Nov 2018	6 th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance from LTI during evening time	Y	Refer to the investigation for complaint no. 248	Closed
240	6 Nov 2018	6 th November 2018/ Lam Tin Interchange	Resident of Yau Lai Estate	Noise	Complained about the noise nuisance from LTI during evening time	Y	Refer to the investigation for complaint no. 248	Closed

Appendix O - Cumulative Log for Complaints, Notifications of Summons and Successful Prosecutions
Table O2 - Summary of Cumulative Complaint Log for Tseung Kwan O - Lam Tin Tunnel

Reporting Month/Year	Number of Complaints in Reporting Month	Number of Summons in Reporting Month	Number of Prosecutions in Reporting Month
2016	11	0	0
2017	99	1	0
2018	150	0	1
2019	156	0	0
2020	88	0	0
Jan-21	12	0	0
Feb-21	3	0	0
Mar-21	14	0	0
Apr-21	16	0	0
May-21	4	0	0
Jun-21	3	0	0
Jul-21	3	0	0
Aug-21	3	0	0
Sep-21	5	0	0
Oct-21	4	0	0
Nov-21	7	0	0
Dec-21	8	0	0
Total	586	1	1

Table O3 - Cumulative Log for Notifications of Summons

Contract No.	Log Ref.	Date/Location	Subject	Status	Total no. Received in this Reporting Month	Total no. Received since project commencement
NE/2015/01	--	--	--	--	--	--
NE/2015/02	KTS24138/2017	25 June 2017/ Marine construction site at Junk Bay	Contrary to: Sections 6 (1) (b) and 6 (5), Noise Control Ordinance, Cap.400	The Summon was issued on 22 Dec 2017 First hearing on 29/3/2018	Noise nuisance during nighttime (C1 - Apr 2021)	1
NE/2015/03	--	--	--	--	--	--
NE/2017/01	--	--	--	--	--	--
NE/2017/02	--	--	--	--	--	--
NE/2017/06	--	--	--	--	--	--
NE/2017/07	--	--	--	--	--	--

Table O4 - Cumulative Log for Successful Prosecutions

Contract No.	Log Ref.	Date/Location	Subject	Status	Total no. Received in this reporting month	Total no. Received since project commencement
NE/2015/01	--	--	--	--	--	--
NE/2015/02	KTS24138/2017	25 June 2017/ Marine construction site at Junk Bay	Contrary to: Sections 6 (1) (b) and 6 (5), Noise Control Ordinance, Cap.400	Successful prosecution to the subcontractor on 27 June 2018	1	1
NE/2015/03	--	--	--	--	--	--
NE/2017/01	--	--	--	--	--	--
NE/2017/02	--	--	--	--	--	--
NE/2017/06	--	--	--	--	--	--
NE/2017/07	--	--	--	--	--	--

**APPENDIX P
WASTE GENERATION IN THE
REPORTING MONTH**

Monthly Summary Waste Flow Table for Dec 2021



Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	a.Total Quantity Generated (see Note 8)	b. Hard Rock and Large Broken Concrete	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill	f. Imported Fill	g. Metals (see Note 5)	h. Paper / Cardboard Packaging (see Note 5)	i. Plastics (see Note 3) (see Note 5)	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
January	11.091	6.430	0.000	6.430	4.661	0.000	0.000	0.000	0.000	0.000	0.239
February	14.149	4.329	0.000	4.329	9.820	0.000	0.000	0.000	0.000	0.000	0.533
March	9.334	5.356	0.000	5.356	3.978	0.000	0.000	0.000	0.000	0.000	0.901
April	24.397	4.352	0.000	4.352	20.045	0.000	0.000	0.000	0.000	1.680	0.675
May	18.246	2.529	0.000	2.529	15.717	0.000	0.000	0.000	0.000	0.165	0.502
June	10.865	2.010	0.000	2.010	8.855	0.000	0.000	0.000	0.000	0.000	0.599
Sub-total	88.082	25.006	0.000	25.006	63.076	0.000	0.000	0.000	0.000	1.845	3.449
July	15.102	2.042	0.000	2.042	13.060	0.000	0.000	0.000	0.000	0.000	0.627
August	9.861	0.869	0.000	0.869	8.992	0.000	0.000	0.000	0.000	0.000	0.881
September	10.134	1.325	0.000	1.325	8.809	0.000	0.000	0.000	0.000	0.000	0.961
October	9.184	0.554	0.000	0.554	8.630	0.000	0.000	0.000	0.000	0.000	0.958
November	13.961	1.634	0.000	1.634	12.327	0.000	0.000	0.000	0.000	0.000	1.391
December	13.421	1.770	0.000	1.770	11.651	0.000	0.001	0.000	0.010	0.030	1.263
Total	159.745	33.200	0.000	33.200	126.545	0.000	0.001	0.000	0.010	1.875	9.530

Total inert C&D waste generated = c+d+e

Total inert C&D waste recycled = c+d

$$\% \text{ of recycled inert C\&D waste} = \frac{\text{Total C\&D waste recycled}}{\text{Total C\&D waste generated}}$$

Name of Department: Civil Engineering Development Department

Contract No.: NE/2015/01

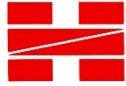


- Notes:
- (1) The performance target are given in PS Clause 6(14)
 - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site
 - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
 - (4) The Contractor shall also submit the latest forecast of the amount of C&D materials expected to be generated from the Works, together with a break down of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m³. (PS Clause 1.105(4) refers)
 - (5) All recyclable materials, including metals, paper / cardboard packaging, plastics, etc. will be collected by registered collector for recycling.
 - (6) Conversion factors for reporting purpose:
in-situ: rock = 2.5 tonnes/m³; soil = 2.0 tonnes/m³
 - (7) excavated: rock = 2.0 tonnes/m³; soil = 1.8 tonnes/m³; broken concrete and bitumen = 2.4 tonnes/m³, soil and rock = 1.9 tonnes/m³
 - (8) C&D Waste = 0.9 tonnes/m³; bentonite slurry = 2.8 tonnes/m³
Diesel density: 0.8kg/l
Numbers are rounded off to the nearest three decimal places
The "Total Quantity Generated" equals to the sum of "Reuse in the Contract", "Reuse in Other Projects" and "Disposed as Public Fill"

Monthly Summary Waste Flow Table for 2021 Year

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Borken Concrete	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Imported Fill	Metals	Paper / Cardboard Packaging	Plastics (See note 3)	Chemical Waste	Other, e.g. general refuse
	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000m ³]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m ³]
Jan	2.66301	0.00000	0.00000	0.00000	2.66301	0.00000	0.00000	0.00000	0.00000	0.00000	0.11320
Feb	0.89033	0.00000	0.00000	0.00000	0.89033	0.00000	14.25000	0.00000	0.00000	0.00000	0.12088
Mar	0.44910	0.00000	0.00000	0.00000	0.44910	0.00000	26.19000	0.00000	0.00000	0.00000	0.09580
Apr	1.77404	0.00000	0.00000	0.00000	1.77404	0.00000	42.72000	0.00000	0.00000	0.00000	0.11686
May	4.14261	0.00000	0.00000	0.00000	4.14261	0.00000	17.80000	0.00000	0.00000	0.00000	0.17156
June	4.91083	0.00000	0.00000	0.00000	4.91083	0.00000	44.94000	0.00000	0.00000	0.00000	0.63252
SUB-TOTAL	14.82991	0.00000	0.00000	0.00000	14.82991	0.00000	145.90000	0.00000	0.00000	0.00000	1.25082
Jul	5.10758	0.00000	0.00000	0.00000	5.10758	0.00000	65.86000	0.00000	0.00000	0.00000	0.16568
Aug	5.63826	0.00000	0.00000	0.00000	5.63826	0.00000	102.12000	0.00000	0.00000	0.00000	0.15174
Sep	3.46939	0.00000	0.00000	0.00000	3.46939	0.00000	242.16000	0.00000	0.00000	0.00000	0.12778
Oct	0.71106	0.00000	0.00000	0.00000	0.71106	0.00000	185.72000	0.00000	0.00000	0.00000	0.18270
Nov	0.19300	0.00000	0.00000	0.00000	0.19300	0.00000	78.44000	0.00000	0.00000	0.00000	0.26284
Dec	0.73760	0.00000	0.00000	0.00000	0.73760	0.00000	42.27000	0.00000	0.00000	0.00000	0.21214
TOTAL	30.68679	0.00000	0.00000	0.00000	30.68679	0.00000	862.47000	0.00000	0.00000	0.00000	2.35370

Note: Conversion to 1000m³ for general refuse is weight in 1000kg multiply by 0.002
 Conversion to 1000m³ for Inert C&D is weight in 1000kg multiply by 0.0005
 Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material
 Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material



Monthly Summary of Waste Flow Table for 2021

Name of Person completing the Record: Steve Wong

Month	Actual Quantities of Inert C&D Materials Generated Monthly					Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
		(see Note 1)						(see Note 2)		
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000 Kg)	(in '000m ³)	
Jan	0.5830	0	0	0	0.5830	0	0	0	0	0.0032
Feb	0.2614	0	0	0	0.2614	0	0	0	0	0.0081
Mar	0.7659	0	0	0	0.7659	0	0	0	0	0.0078
Apr	0.1487	0	0	0	0.1487	0	0	0	0	0.0089
May	0.1876	0	0	0	0.1876	0	0	0	0	0.0053
Jun	0.1218	0	0	0	0.1218	0	0	0	0	0.0149
Sub-total	2.0684	0	0	0	2.0684	0	0	0	0	0.0482
Jul	0.3437	0	0	0	0.3437	0	0	0	0	0.0114
Aug	0.0399	0	0	0	0.0399	0	0	0	0	0.0141
Sep	0.4300	0	0	0	0.4300	0	0	0	0	0.00887
Oct	0.1588	0	0	0	0.1588	0	0	0	0	0.0288
Nov	0.2890	0	0	0	0.2890	0	0	0	0	0.0304
Dec	0.6730	0	0	0	0.6730	0	0	0	0	0.0163
Total	4.0028	0	0	0	4.0028	0	0	0	0	0.1581

Notes:

- (1) Broken concrete for recycling into aggregates.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) Use the conversion factor: 1 full load of 24t / 30t dumping truck being equivalent to 6.5m³ / 8.125 m³ by volume.



Monthly Summary Waste Flow Table For 2021

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock & Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ Cardboard Packaging	Plastics	Chemical Waste	Others, e.g. General Refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	0	0	0	0	0	0	0	0	0	0	0.003
Feb	0	0	0	0	0	0	0	0	0	0	0.006
Mar	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0.003
Jun	0	0	0	0	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0	0	0	0	0.012
Jul	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0.006
Oct	0	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	0	0.003
Dec	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0.021

- Notes:
- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.
 - (3) Each dump truck carries 6m³ of general refuse.
 - (4) The commencement date of the Contract is 9 November 2018. The current reporting period is from 1 December 2021 to 31 December 2021.

Monthly Summary Waste Flow Table for 2021

Name of Department: Civil Engineering and Development Department

Contract No.: NE/2017/01

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	0.0132	0.0000	0.0000	0.0000	0.0132	0.0000	9.0500	0.0000	0.0000	0.0000	0.0107
Feb	0.0374	0.0000	0.0000	0.0000	0.0374	0.0000	0.0000	0.0000	0.0000	0.0000	0.0077
Mar	0.4590	0.0000	0.0000	0.0000	0.0459	0.0000	0.0000	0.0000	0.0000	0.0000	0.0123
Apr	0.0058	0.0000	0.0000	0.0000	0.0058	0.0000	14.4200	0.0000	0.0000	0.0000	0.0216
May	0.0224	0.0000	0.0000	0.0000	0.0224	0.0000	28.3400	0.0000	0.0000	0.0000	0.0296
Jun	0.0061	0.0000	0.0000	0.0000	0.0061	0.0000	51.5900	0.0000	0.0000	0.0000	0.0137
Sub-total	0.5439	0.0000	0.0000	0.0000	0.1309	0.0000	103.4000	0.0000	0.0000	0.0000	0.0956
Jul	0.0110	0.0000	0.0000	0.0000	0.0110	0.0000	134.480	0.0000	0.0000	0.0000	0.0169
Aug	0.0051	0.0000	0.0000	0.0000	0.0051	0.0000	0.0000	0.0000	0.0000	0.0000	0.0418
Sep	0.0191	0.0000	0.0000	0.0000	0.0191	0.0000	90.3300	0.0000	0.0000	0.2000	0.0395
Oct	0.0283	0.0000	0.0000	0.0000	0.0283	0.0000	28.9700	0.0000	0.0000	0.0000	0.0322
Nov	0.0218	0.0000	0.0000	0.0000	0.0218	0.0000	10.1300	0.0000	0.0000	0.0000	0.0468
Dec	0.0357	0.0000	0.0000	0.0000	0.0357	0.0000	13.8300	0.0000	0.0000	0.0000	0.0468
Total	0.6649	0.0000	0.0000	0.0000	0.2519	0.0000	381.1400	0.0000	0.0000	0.2000	0.3196

- Notes:
1. Assume the density of soil fill is 2 ton/m³.
 2. Assume the density of rock and broken concrete is 2.5 ton/m³.
 3. Assume the density of mixed rock and soil is 1.9 ton/m³.
 4. Assume the density of slurry and bentonite is 2.8 ton/m³.
 5. The slurry and bentonite are disposed at Tseung Kwan O Area 137 Fill Bank.
 6. Assume the density of C&D waste is 0.9 ton/m³.
 7. The non-inert C&D wastes are disposed at NENT.

Monthly Summary Waste Flow Table for 2021 (year)

Name of Person completing the record: Calvin So (EO)

Project : Cross Bay Link, TKO, Main Bridge and Associated Works

Contract No.: NE/2017/07

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m ³)
Jan	0.132	0.000	0.000	0.000	0.132	0.000	0.000	0.113	0.000	0.000	0.399
Feb	0.108	0.000	0.000	0.000	0.108	0.000	0.000	0.186	0.000	0.000	0.351
Mar	0.060	0.000	0.000	0.000	0.060	0.000	0.000	0.099	0.000	0.000	0.512
Apr	0.018	0.000	0.000	0.000	0.018	0.000	0.000	0.121	0.000	0.000	0.283
May	0.576	0.000	0.000	0.000	0.576	0.000	0.000	0.103	0.000	0.000	0.278
Jun	1.170	0.000	0.000	0.000	1.170	0.000	0.000	0.210	0.000	0.000	0.437
Sub-total	2.064	0.000	0.000	0.000	2.064	0.000	0.000	0.832	0.000	0.000	2.259
Jul	0.060	0.000	0.000	0.000	0.060	0.000	0.000	0.155	0.000	0.000	0.204
Aug	0.018	0.000	0.000	0.000	0.018	0.000	0.000	0.170	0.000	0.000	0.157
Sep	0.066	0.000	0.000	0.000	0.066	0.000	0.000	0.141	0.000	0.000	0.284
Oct	0.036	0.000	0.000	0.000	0.036	0.000	0.000	0.151	0.000	0.000	0.211
Nov	0.498	0.000	0.000	0.000	0.498	0.000	0.000	0.160	0.000	0.000	0.343
Dec	0.006	0.000	0.000	0.000	0.006	0.000	0.000	0.154	0.000	0.000	0.181
Total	2.748	0.000	0.000	0.000	2.748	0.000	0.000	1.763	0.000	0.000	3.639

Note:

1. For non-inert portion of C&D material, assume the density of 1 m³ general refuse is equal to 200 kg.
2. For inert portion of C&D material, assume 6 m³ per each full-filled dump truck.
3. All values are round off to the third decimal places.

**APPENDIX Q
TENTATIVE CONSTRUCTION
PROGRAMME**

High Level 3 Months Look Ahead Programme

Activities	Jan-22	Feb-22	Mar-22
Lam Tin Interchange			
EHC2 U-Trough			
EHC2 Noise Enclosure			
Site Formation - Area 1G1 & 1G2 &5			
Site Formation - Area 2			
Site Formation - Slope Stabilisation			
Site Formation - Retaining Wall			
Administration Building			
West Ventilation Building			
Bridge Construction			
Emergency Stormwater storage tank + Stormwater pumping station			
Sewage Pumping Station			
S01_2, EHC1 & 4 Construction			
CKLR Underground Utilities			
Underpass S01			
Landscape Deck & Noise Cover			
LTI Drainage			
Road EHC4 site formation works			
Tunnel			
Main Tunnel Lining Works			
Branch Tunnel Lining Works			
S02_2 Excavation & Lining			
Tunnel E&M Works			
TKO Interchange			
Bridge Construction			
East Ventilation Building			
TKO - Underground Utilities / Drainage Works			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - Act. Duration	December 2021				January 2022				February 2022				March 2022					
										12	19	26	02	09	16	23	30	06	13	20	27	06	13				
NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works (Dec 2021)																											
Target Key Date and Section Completion of the Works (Revised Contract Key Date)																											
P2-Cal.A	A10520	Section 2_All Works within Portion II	0.0	0.0	12-Mar-22	12-Mar-22	-281.5	0%	0.0																		
Target Key Date and Section Completion of the Works (Possible Contract Key Date)																											
P2-Cal.A	A10820	Section 2_All Works within Portion II	0.0	0.0	12-Mar-22	12-Mar-22	-246.0	0%	0.0																		
Interface Issue																											
P2-Cal.C	K10419-57	Watermain connection C2/C3 by C2 (PMI341)	0.0	0.0	05-Feb-22	05-Feb-22	450.0	0%	0.0																		
P2-Cal.A	K10419-55	Handover to WSD for final watermain connection	0.0	0.0	09-Feb-22	09-Feb-22	536.0	0%	0.0																		
Area Handover Date																											
P2-Cal.A	A10640	Area B	0.0	0.0	31-Dec-21	31-Dec-21	0.0	0%	0.0																		
Compensation Event (CE)																											
P2-Cal.C	B53950	CE no. 377: 'Relocation of Cross Road Trench at U-Trough at Portion VIII	0.0	0.0	20-Dec-21	20-Dec-21		100%	0.0																		
Early Warning (EW)																											
P2-Cal.C	B54230	EW no. 237 Unexpected long lead time for the production and delivery of gasket material for VE panel system	0.0	0.0	20-Dec-21	20-Dec-21	485.0	0%	0.0																		
P2-Cal.C	B54280	EW no. 238 Re-division of Roof Slab R8 and R9	0.0	0.0	20-Dec-21	20-Dec-21	485.0	0%	0.0																		
P2-Cal.C	B54290	EW no. 239 Aggregate Supply Deficiency Before CNY 2022	0.0	0.0	20-Dec-21	20-Dec-21	485.0	0%	0.0																		
P2-Cal.C	B54300	EW no. 240 Concrete Wave Wall in Connection with Existing Planter at TKO Waterfront Promenade	0.0	0.0	20-Dec-21	20-Dec-21		100%	0.0																		
Preliminaries, Submission, Contractor's Design Submission and Approval																											
Procurement of Major Material																											
Civil/Structural																											
P2-Cal.A	S14998	Offsite Fabrication of Steel Works for the Sign Gantry (FADS35 and FVMS)	90.0	58.0	08-Sep-21	16-Feb-22	-339.0	35.56%	-72.0																		
P2-Cal.A	S14998-10	Offsite Fabrication of sign board for FADS35 (by CSD)	161.0	113.0	02-Nov-21	11-Apr-22	-386.0	29.81%	0.0																		
Architectural																											
P2-Cal.A	S15142-03	Delivery of VE Panel and Precast Concrete Panel (1st batch)	7.0	7.0	20-Dec-21	26-Dec-21	-404.5	0%	0.0																		
P2-Cal.C	S15142-13	Delivery of VE Panel and Precast Concrete Panel (2nd -6th batches)	18.0	18.0	28-Dec-21	18-Jan-22	-328.5	0%	7.0																		
P2-Cal.C	S15142-23	Delivery of Remaining VE Panel and Precast Concrete Panels	122.0	122.0	19-Jan-22	21-Jun-22	-328.5	0%	-97.0																		
E&M																											
P2-Cal.A	S15144	Procurement and Delivery of MVAC Plant	100.0	39.0	20-Oct-21	27-Jan-22	-372.0	61%	0.0																		
P2-Cal.A	S15150	Procurement and Delivery of EL Equipment	135.0	44.0	20-Sep-21	01-Feb-22	-393.0	67.41%	0.0																		
Section 2 of the Works (All Works Within Portion II)																											
Roadworks																											
Adjacent to site office (SMH SR06 & SR07)																											
P2-Cal.C	LC12174-10	Construction of SMH-SR07 (Manhole Walls and top slab)	12.0	5.0	18-Oct-21	24-Dec-21	-262.5	58.33%	-47.0																		
P2-Cal.C	LC12204	Backfilling to formation level	21.0	21.0	28-Dec-21	21-Jan-22	-262.5	0%	0.0																		
P2-Cal.C	LC12194	Construction of catchpit and u-channel	14.0	14.0	22-Jan-22	10-Feb-22	-262.5	0%	0.0																		
P2-Cal.C	LC12214	Construction of Road Kerb, Cycle Track and Footpath	26.0	26.0	11-Feb-22	12-Mar-22	-262.5	0%	0.0																		
Section 3 of the Works All Works within Portion IV, V, VI, VII, VIII, and IX																											
Existing Land Section																											

■ Actual Work ◆ B
■ Remaining Work ◆ M
■ Critical Remaining Work

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works

3 Months Rolling Programme Update
 (Data Date : 20 Dec 2021)

Date	Revision	Chec...	Approved
20-De...			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - SLT	Duration	December 2021				January 2022				February 2022				March 2022											
											12	19	26	02	09	16	23	30	06	13	20	27	03	10	17									
P2 Road																																		
P2 CH 363 - 411																																		
Structure P2 CH 363 - 411 (U Trough B) (Team 9 & 10)																																		
P2-Cal.C	LC14190-01	Concrete infill for Bay 3 base slab	2.0	0.0	19-Dec-21	23-Dec-21	-347.0	100%	-1.0																									
P2-Cal.C	LC14200-01	Removal of 3rd Strut for Bay 3 at -0.90mPD	2.0	2.0	24-Dec-21	28-Dec-21	-347.0	0%	0.0																									
P2-Cal.C	LC14140	Construction of Base Slab Bay 3 (ready for cast on 18 Dec, final pour affected by concrete supply shortage)	12.0	10.0	30-Nov-21	03-Jan-22	-347.0	16.67%	-15.0																									
P2-Cal.C	LC14110	Construction of Base Slab Bay 1 (NCE390)	14.0	14.0	26-Oct-21	07-Jan-22	-349.0	0%	-47.0																									
P2-Cal.C	LC14130	Construction of Base Slab Bay 2 (NCE390)	22.0	14.0	26-Oct-21	07-Jan-22	-349.0	36.36%	-39.0																									
P2-Cal.C	LC14220	Construction of Bay 1 Wall up to +3.4 mPD	13.0	21.0	07-Dec-21	15-Jan-22	-349.0	0%	-19.0																									
P2-Cal.C	LC14230	Construction of Bay 2 Wall up to +3.4 mPD	13.0	21.0	07-Dec-21	15-Jan-22	-349.0	0%	-19.0																									
P2-Cal.C	LC14240-10	Construction of 1st rise Feature Wall at Bay 3 up to +3.8mPD	16.0	16.0	04-Jan-22	21-Jan-22	-342.0	0%	-2.0																									
P2-Cal.C	LC14230-20	Formwork removal, waterproofing and backfilling from -1.0 to +1.40mPD at Bay 1, 2	7.0	7.0	17-Jan-22	24-Jan-22	-349.0	0%	0.0																									
P2-Cal.C	LC14230-30	Removal of 2nd layer of struts at +1.60mPD at Bay 2	2.0	2.0	25-Jan-22	26-Jan-22	-349.0	0%	0.0																									
P2-Cal.C	LC14230-10	Construction of Bay 3 Wall up to +3.4 mPD	22.0	22.0	31-Dec-21	26-Jan-22	-349.0	0%	-15.0																									
P2-Cal.C	LC14230-40	Waterproofing and backfill between +1.60 and +3.40mPD at Bay 1 & 2	3.0	3.0	27-Jan-22	29-Jan-22	-349.0	0%	0.0																									
P2-Cal.C	LC14230-60	Removal of 1st layer of struts at +3.80mPD at Bay 1 & 2	3.0	3.0	31-Jan-22	05-Feb-22	-349.0	0%	0.0																									
P2-Cal.C	LC14230-25	Formwork removal, waterproofing and backfilling from -1.0 to +1.40mPD at Bay 3	7.0	7.0	27-Jan-22	07-Feb-22	-349.0	0%	0.0																									
P2-Cal.C	LC14230-35	Removal of 2nd layer of struts at +1.60mPD at Bay 3	2.0	2.0	08-Feb-22	09-Feb-22	-349.0	0%	0.0																									
P2-Cal.C	LC14230-50	Waterproofing and backfill between +1.60 and +3.40mPD at Bay 3	3.0	3.0	10-Feb-22	12-Feb-22	-349.0	0%	0.0																									
P2-Cal.C	LC14230-65	Removal of 1st layer of struts at +3.80mPD at Bay 3	2.0	2.0	14-Feb-22	15-Feb-22	-349.0	0%	0.0																									
P2-Cal.C	LC14305	Erect falsework for Upper Walls (to +7.6mPD) and Grid Beams construction (Bay 2)	12.0	12.0	07-Feb-22	19-Feb-22	-349.0	0%	1.0																									
P2-Cal.C	LC14305-10	Soffit formworks for Grid Beam at Bay 2	7.0	7.0	21-Feb-22	28-Feb-22	-349.0	0%	-7.0																									
P2-Cal.C	LC14315	Erect falsework for Upper Walls (to +7.6mPD) and Grid Beams construction (Bay 3)	12.0	12.0	16-Feb-22	01-Mar-22	-349.0	0%	1.0																									
P2-Cal.C	LC14315-10	Soffit formworks for Grid Beam at Bay 3	7.0	7.0	02-Mar-22	09-Mar-22	-349.0	0%	-7.0																									
P2-Cal.C	LC14310	Construction of Grid Beams, upper walls and upper feature wall at Bay 2	18.0	18.0	01-Mar-22	21-Mar-22	-349.0	0%	-4.0																									
P2-Cal.C	LC14320	Construction of Grid Beams, upper walls and upper feature wall at Bay 3	19.0	19.0	10-Mar-22	31-Mar-22	-349.0	0%	-5.0																									
P2 CH 411- 500																																		
Structure P2 CH 411 - 500 (U Trough A)																																		
Wall Stem																																		
P2-Cal.C	LC15230	Construction of wall stem Final Pour at Bay 1	13.0	13.0	07-Feb-22	21-Feb-22	-298.0	0%	0.0																									
P2-Cal.C	LC15242	Backfilling and Removal of Sheetpile after Bay 1 final pour completed	14.0	14.0	22-Feb-22	09-Mar-22	-298.0	0%	0.0																									
P2-Cal.C	LC15270-00	Installation of Precast Concrete Profile Barrier at Bay 1 after sheet pile remove	14.0	14.0	10-Mar-22	25-Mar-22	-298.0	0%	0.0																									
Remaining Works																																		
P2-Cal.C	LC20882	D1300 watermain laying	6.0	6.0	16-Feb-22	22-Feb-22	-254.5	0%	4.0																									
P2-Cal.C	LC20940	Laying of TCSS duct and Construction of Drawpits	8.0	8.0	10-Mar-22	18-Mar-22	414.0	0%	0.0																									
SR2																																		
SR2 CH110 - 170																																		
Structure SR2 CH110 - 170 (U Trough B) (team 11 - 13)																																		

- Actual Work
- Remaining Work
- Critical Remaining Work
- ◆ B
- ◆ M

NE/2015/02 Tseung Kwan O - Lam Tin Tunnel-Road P2 and Associated Works

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Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - Act. Duration	Gantt Chart											
										12	19	26	02	09	16	23	30	06	13	20	27
P2-Cal.C	LC16330	Construction of Bay 2 Wall up to +1.2mPD	14.0	13.0	19-Nov-21 A	06-Jan-22	-349.0	7.14%	-25.0	Construction of Bay 2 Wall up to +1.2mPD											
P2-Cal.C	LC16320-10	Apply Waterproofing behind Bay 1 from -0.5 to 3.0mPD	6.0	17.0	13-Dec-21 A	11-Jan-22	-314.0	0%	-17.0	Apply Waterproofing behind Bay 1 from -0.5 to 3.0mPD											
P2-Cal.C	LC16380	Waterproofing and Backfilling from -1.7mPD to -1.2mPD for Bay 2	7.0	7.0	07-Jan-22	14-Jan-22	-344.0	0%	0.0	Waterproofing and Backfilling from -1.7mPD to -1.2mPD for Bay 2											
P2-Cal.C	LC16320-15	Concrete infill behind Bay 1 Wall up to 3.0mPD	3.0	3.0	12-Jan-22	14-Jan-22	-314.0	0%	-3.0	Concrete infill behind Bay 1 Wall up to 3.0mPD											
P2-Cal.C	LC16390	Removal of 2nd Layer ELS @ +1.6mPD for Bay 2	2.0	2.0	15-Jan-22	17-Jan-22	-344.0	0%	0.0	Removal of 2nd Layer ELS @ +1.6mPD for Bay 2											
P2-Cal.C	LC16320-20	Removal of 1st layer Struts @ +4.0 at Bay 1	3.0	3.0	15-Jan-22	18-Jan-22	-314.0	0%	0.0	Removal of 1st layer Struts @ +4.0 at Bay 1											
P2-Cal.C	LC16430	Construction of Bay 2 Wall up to +3.5mPD	9.0	9.0	18-Jan-22	27-Jan-22	-344.0	0%	0.0	Construction of Bay 2 Wall up to +3.5mPD											
P2-Cal.C	LC16440-10	Waterproofing and Backfilling from +0.6mPD to +3.5mPD for Bay 2	8.0	8.0	28-Jan-22	09-Feb-22	-332.0	0%	0.0	Waterproofing and Backfilling from +0.6mPD to +3.5mPD for Bay 2											
P2-Cal.C	LC16440-20	Removal of 1st Layer ELS @ +4.00mPD for Bay 2	3.0	3.0	10-Feb-22	12-Feb-22	-332.0	0%	0.0	Removal of 1st Layer ELS @ +4.00mPD for Bay 2											
P2-Cal.C	LC16320-30	Construction of Bay 1 Wall up to 6.0 mPD	14.0	14.0	28-Jan-22	16-Feb-22	-322.0	0%	-5.0	Construction of Bay 1 Wall up to 6.0 mPD											
P2-Cal.C	LC16485-00	Erection of falsework Upper Walls (up to 7.2mPD) and Grid beams at Bay 2	7.0	7.0	14-Feb-22	21-Feb-22	-332.0	0%	6.0	Erection of falsework Upper Walls (up to 7.2mPD)											
P2-Cal.C	LC16485-00-00-10	Install soffit formworks for Grid Beams at Bay 2	6.0	6.0	22-Feb-22	28-Feb-22	-332.0	0%	-6.0	Install soffit formworks for Grid Beams											
P2-Cal.C	LC16485-00-01	Grid beams and upper walls construction at Bay 2 (6 nos)	14.0	14.0	01-Mar-22	16-Mar-22	-332.0	0%	-2.0	Grid beams and upper walls construction at Bay 2											
P2-Cal.C	LC16530	Backfilling to Formation Level and Removal of Sheet Piles	15.0	15.0	17-Mar-22	02-Apr-22	-294.5	0%	0.0	Backfilling to Formation Level and Removal of Sheet Piles											
SR2 CH170 - 250			9.0	9.0	18-Nov-21 A	31-Dec-21	-195.5		-27.0												
Structure SR2 CH 170 - 250 (U Trough A)			9.0	9.0	18-Nov-21 A	31-Dec-21	-195.5		-27.0												
P2-Cal.C	LC17395	Construction of wall stem 2nd pour (top level) at CH170 - 182.5	9.0	9.0	18-Nov-21 A	31-Dec-21	-195.5	0%	-27.0	Construction of wall stem 2nd pour (top level) at CH170 - 182.5											
Portion IV & VII			60.0	60.0	09-Mar-22	24-May-22	-286.5		0.0												
Construction of DN2100 stormwater at Portion IV & VII			60.0	60.0	09-Mar-22	24-May-22	-286.5		0.0												
Drainage works			60.0	60.0	09-Mar-22	24-May-22	-286.5		0.0												
Inspection 2100 Drainage Pipe			60.0	60.0	09-Mar-22	24-May-22	-286.5		0.0												
P2-Cal.C	LC17718	Extend the Manhole from +3.5mPD to Proposed Cover Level (After Completion of Roof Slab of Underpass)	60.0	60.0	09-Mar-22	24-May-22	-286.5	0%	0.0	Extend the Manhole from +3.5mPD to Proposed Cover Level (After Completion of Roof Slab of Underpass)											
TKO Town Centre South Reinstatement (PS Cl. 1.45)			107.0	79.0	17-Nov-21 A	28-Mar-22	-259.5		0.0												
P2-Cal.C	LC17722	Reinstatement of existing footpath	30.0	2.0	17-Nov-21 A	21-Dec-21	-259.5	93.33%	0.0	Reinstatement of existing footpath											
P2-Cal.C	LC17724	Gate Installation for separation of existing site office to public	7.0	7.0	22-Dec-21	31-Dec-21	-259.5	0%	0.0	Gate Installation for separation of existing site office to public											
P2-Cal.C	LC17726	Cycle Track and Footpath Kerb Installation	35.0	35.0	03-Jan-22	15-Feb-22	-259.5	0%	0.0	Cycle Track and Footpath Kerb Installation											
P2-Cal.C	LC17728	Cycle Track and Footpath Paving	35.0	35.0	16-Feb-22	28-Mar-22	-259.5	0%	0.0	Cycle Track and Footpath Paving											
New Reclaimed Section			252.0	124.0	20-Jul-21 A	26-May-22	361.0		-14.0												
Marine Works			132.0	79.0	19-Oct-21 A	28-Mar-22	-253.5		-54.0												
Concrete Coping			132.0	79.0	19-Oct-21 A	28-Mar-22	-253.5		-54.0												
Eastern Seawall			132.0	79.0	19-Oct-21 A	28-Mar-22	-253.5		-54.0												
P2-Cal.C	MC13455	Coping Area 2 (CH71-160) 1st pour up to 5.3mPD approx. (93m)	78.0	26.0	19-Oct-21 A	21-Jan-22	-330.0	66.67%	-1.0	Coping Area 2 (CH71-160) 1st pour up to 5.3mPD approx. (93m)											
P2-Cal.C	MC13435	Coping Area 2 (CH160-189) 1st pour up to 5.3mPD approx. (29m)	78.0	42.0	19-Oct-21 A	12-Feb-22	-330.0	46.15%	-17.0	Coping Area 2 (CH160-189) 1st pour up to 5.3mPD approx. (29m)											
P2-Cal.C	MC13455-10	Coping Area 2 (CH71-160) 2nd and 3rd pour up to 7.8mPD approx. (93m)	51.0	51.0	22-Jan-22	25-Mar-22	-251.5	0%	-51.0	Coping Area 2 (CH71-160) 2nd and 3rd pour up to 7.8mPD approx. (93m)											
P2-Cal.C	MC13445	Coping Area 2 2 (CH160-189) 2nd pour up to 7.8mPD approx. (29m)	37.0	37.0	14-Feb-22	28-Mar-22	-253.5	0%	-37.0	Coping Area 2 2 (CH160-189) 2nd pour up to 7.8mPD approx. (29m)											
Land Works			252.0	124.0	20-Jul-21 A	26-May-22	361.0		-14.0												
Road P2 Underpass (CH105-CH318)			252.0	124.0	20-Jul-21 A	26-May-22	361.0		-14.0												
Underpass			252.0	124.0	20-Jul-21 A	26-May-22	361.0		-14.0												

- Actual Work
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Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - Act. Duration	Gantt Chart											
										December 2021	12	19	26	January 2022	02	09	16	23	30	February 2022	06
Underpass P2 CH 105 - 318																					
Foundation (On Top Surcharge)																					
P2-Cal.C	LC17823-1	Installation of Sokceted H-pile (6 nos) for Electrical Plant Room Drilling to FL - 3d/nos	15.0	15.0	12-Feb-22	01-Mar-22	-321.0	0%	0.0	Installation of Sokceted H-pile (6 nos)											
P2-Cal.C	LC17825-1	Installation of Sokceted H-pile (6 nos) for Electrical Plant Room Grouting - 2d/nos	12.0	12.0	21-Feb-22	05-Mar-22	-321.0	0%	0.0	Installation of Sokceted H-pile (6 nos)											
3rd Wall & Top Slab (Team 1 to 6)																					
P2-Cal.C	LC18348-26	Construction of Roof Slab No. 1	11.0	0.0	09-Dec-21	20-Dec-21		100%	2.0	Construction of Roof Slab No. 1											
P2-Cal.C	LC18348-09-01	Construction of Roof Slab No. 11a (under NCE390 and PMI351)(ready to cast since 19 Nov 21)	11.0	2.0	20-Nov-21	21-Dec-21	483.0	81.82%	-16.0	Construction of Roof Slab No. 11a (under NCE390 and PMI351)(ready to cast since 19 Nov 21)											
P2-Cal.C	LC18348-18	Construction of Roof Slab No. 7 (ready to cast since 9 Dec 21 but affected by shortage of concrete supply)	11.0	7.0	25-Nov-21	29-Dec-21	-328.5	36.36%	-17.0	Construction of Roof Slab No. 7 (ready to cast since 9 Dec 21 but affected by shortage of concrete supply)											
P2-Cal.C	LC18348-14	Construction of Roof Slab No. 9a (under NCE390)	11.0	11.0	08-Dec-21	04-Jan-22	-327.5	0%	-10.0	Construction of Roof Slab No. 9a (under NCE390)											
P2-Cal.C	LC18348-16	Construction of Roof Slab No. 8	11.0	12.0	07-Dec-21	05-Jan-22	-328.5	0%	-12.0	Construction of Roof Slab No. 8											
P2-Cal.C	LC18363	Removal of Falseworks for Roof Slabs (No. 1- No. 3)	24.0	38.0	17-Dec-21	08-Feb-22	-323.0	0%	-16.0	Removal of Falseworks for Roof Slabs (No. 1- No. 3)											
P2-Cal.C	LC18360-10	Installation of waterproofing and backfilling above Underpass Roof Slab (No. 7 -12)	40.0	40.0	13-Jan-22	03-Mar-22	-328.5	0%	0.0	Installation of waterproofing and backfilling above Underpass Roof Slab (No. 7 -12)											
P2-Cal.C	LC18360-01	Installation of waterproofing and backfilling above Underpass Roof Slab (Roof No. 1-3)	24.0	24.0	14-Feb-22	12-Mar-22	-312.5	0%	0.0	Installation of waterproofing and backfilling above Underpass Roof Slab (Roof No. 1-3)											
P2-Cal.C	LC18362	Removal of Falseworks for Roof Slabs (No. 6 to No. 12)	60.0	60.0	11-Jan-22	24-Mar-22	-342.0	0%	-26.0	Removal of Falseworks for Roof Slabs (No. 6 to No. 12)											
Remaining Works																					
P2-Cal.C	LC28720	Access via UP Roof 7-12 to complete remaining 2100 dia. storm drain manholes (4 nos, SMH9106 - 9109)	56.0	56.0	21-Feb-22	30-Apr-22	-328.5	0%	0.0	Access via UP Roof 7-12 to complete remaining 2100 dia. storm drain manholes (4 nos, SMH9106 - 9109)											
Fixed Foam Room/Sump Pit Room/Stormwater Plant Room																					
Fixed Foam Room/Sump Pit Room/Stormwater Plant Room (Up to -5.0mPD) (Team 7 & 6)																					
P2-Cal.C	LC18518	Removal of 2nd water/strut @ -4.0mPD (3 nos at Bay 5 and 6B4 side)	5.0	4.0	20-Dec-21	23-Dec-21	-345.0	20%	-4.0	Removal of 2nd water/strut @ -4.0mPD (3 nos at Bay 5 and 6B4 side)											
P2-Cal.C	LC18524	Construction of slab (MS1+6B5) at -5.0mPD	16.0	8.0	14-Dec-21	30-Dec-21	-349.0	50%	3.0	Construction of slab (MS1+6B5) at -5.0mPD											
P2-Cal.C	LC18524-10	Remove formworks and mass infill behind slab 6B5 up to -6.3mPD	2.0	2.0	31-Dec-21	03-Jan-22	-349.0	0%	0.0	Remove formworks and mass infill behind slab 6B5 up to -6.3mPD											
P2-Cal.C	LC18520	Removal of 2nd water/strut @ -4.0mPD (remaining on external room wall portion)	4.0	4.0	04-Jan-22	07-Jan-22	-349.0	0%	0.0	Removal of 2nd water/strut @ -4.0mPD (remaining on external room wall portion)											
P2-Cal.C	LC18520-01	Removal of 2nd water/strut @ -4.0mPD (Main Tunnel portion)	2.0	2.0	08-Jan-22	10-Jan-22	-343.0	0%	1.0	Removal of 2nd water/strut @ -4.0mPD (Main Tunnel portion)											
P2-Cal.C	LC18528	Construction of stormwater plant room 3rd wall up to -0.5mPD (W3) at 6B4 portion	10.0	10.0	31-Dec-21	12-Jan-22	-349.0	0%	-10.0	Construction of stormwater plant room 3rd wall up to -0.5mPD (W3) at 6B4 portion											
P2-Cal.C	LC18546	Construction of 1st pour Walls at Bay 5 up to -0.5mPD	11.0	11.0	31-Dec-21	13-Jan-22	-347.0	0%	-11.0	Construction of 1st pour Walls at Bay 5 up to -0.5mPD											
P2-Cal.C	LC18546-10	Waterproofing and concrete infill at 1st pour west wall at Bay 5	6.0	6.0	14-Jan-22	20-Jan-22	-346.0	0%	-6.0	Waterproofing and concrete infill at 1st pour west wall at Bay 5											
P2-Cal.C	LC18525	Construction of west side foam room walls up to -0.5mPD	13.0	13.0	07-Jan-22	21-Jan-22	-347.0	0%	-1.0	Construction of west side foam room walls up to -0.5mPD											
P2-Cal.C	LC18528-10	Waterproofing and concrete infill at stormwater plant room 3rd wall (W3) at 6B4 portion	9.0	9.0	13-Jan-22	22-Jan-22	-348.0	0%	-9.0	Waterproofing and concrete infill at stormwater plant room 3rd wall (W3) at 6B4 portion											
P2-Cal.C	LC18530	Construction of stormwater plant room 3rd walls up to -0.5mPD (W3) at 6B5 portion	14.0	14.0	08-Jan-22	24-Jan-22	-349.0	0%	-2.0	Construction of stormwater plant room 3rd walls up to -0.5mPD (W3) at 6B5 portion											
P2-Cal.C	LC18548	Construction of Central Wall (W5) (1st pour to -0.5mPD)	15.0	15.0	11-Jan-22	27-Jan-22	-343.0	0%	-1.0	Construction of Central Wall (W5) (1st pour to -0.5mPD)											
P2-Cal.C	LC18535	Clearance and installation of waterproofing works behind stormwater plant room 3rd wall to -0.5mPD	6.0	6.0	25-Jan-22	31-Jan-22	-349.0	0%	2.0	Clearance and installation of waterproofing works behind stormwater plant room 3rd wall to -0.5mPD											
P2-Cal.C	LC18525-10	Waterproofing and concrete infill for west side foam room walls up to -0.5mPD	8.0	8.0	22-Jan-22	31-Jan-22	-347.0	0%	-8.0	Waterproofing and concrete infill for west side foam room walls up to -0.5mPD											
P2-Cal.C	LC18540	Concrete infill at stormwater plant room 3rd wall (W3) at 6B5 portion	2.0	2.0	04-Feb-22	05-Feb-22	-349.0	0%	0.0	Concrete infill at stormwater plant room 3rd wall (W3) at 6B5 portion											
P2-Cal.C	LC18545	Removal of 1st layer strut @ +0.5mPD (Main Tunnel portions)	3.0	3.0	08-Feb-22	10-Feb-22	-349.0	0%	0.0	Removal of 1st layer strut @ +0.5mPD (Main Tunnel portions)											
P2-Cal.C	LC18545-10	Removal of 1st layer of struts at fixed foam room side	1.0	1.0	11-Feb-22	11-Feb-22	-349.0	0%	-1.0	Removal of 1st layer of struts at fixed foam room side											
P2-Cal.C	LC18545-00	Removal of 1st layer of water and struts at Stormwater Plant Room	4.0	4.0	12-Feb-22	16-Feb-22	-346.0	0%	0.0	Removal of 1st layer of water and struts at Stormwater Plant Room											
P2-Cal.C	LC18545-01	Removal of Temporary Steel Working Platform	7.0	7.0	12-Feb-22	19-Feb-22	-349.0	0%	3.0	Removal of Temporary Steel Working Platform											
P2-Cal.C	LC18548-01	Central Wall RC fixing and formwork shuttering (W5)	10.0	10.0	11-Feb-22	22-Feb-22	-348.0	0%	0.0	Central Wall RC fixing and formwork shuttering (W5)											

■ Actual Work ◆ B
■ Remaining Work ◆ M
■ Critical Remaining Work

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 (Data Date : 20 Dec 2021)

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20-De...			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - Act. Duration	2021																	
										December 2021			January 2022			February 2022			March 2022								
										12	19	26	02	09	16	23	30	06	13	20	27	03	10	17	24		
P2-Cal.C	LC18565-01	Erection of falsework and soffit formwork for roof slabs no. 4a, 4 and 5	11.0	11.0	11-Feb-22	23-Feb-22	-349.0	0%	1.0																		
P2-Cal.C	LC18550	Falsework & roof soffit formwork for west side foam room	13.0	13.0	12-Feb-22	26-Feb-22	-331.0	0%	0.0																		
P2-Cal.C	LC18562-01	West side fix foam room wall RC fixing and formwork shuttering (W5)	10.0	10.0	17-Feb-22	28-Feb-22	-332.0	0%	0.0																		
P2-Cal.C	LC18560	Erection of falsework and soffit formwork for roof slabs no. 6	12.0	12.0	17-Feb-22	02-Mar-22	-334.0	0%	0.0																		
P2-Cal.C	LC18545-12	4th walls (upper walls) for Stormwater Plant Room RC fixing and formwork shuttering (W4B)	10.0	10.0	21-Feb-22	03-Mar-22	-349.0	0%	0.0																		
P2-Cal.C	LC18545-13	Falsework & roof soffit formwork for stormwater plant room	10.0	10.0	21-Feb-22	03-Mar-22	-349.0	0%	0.0																		
P2-Cal.C	LC18565-04	Construction of Main Tunnel Roof Slab no. 5 (cast with upper walls)	10.0	10.0	24-Feb-22	07-Mar-22	-349.0	0%	0.0																		
P2-Cal.C	LC18565-03	Construction of Main Tunnel Roof Slab no. 4a (cast with upper walls)	10.0	10.0	25-Feb-22	08-Mar-22	-349.0	0%	1.0																		
P2-Cal.C	LC18560-01	Construction of Main Tunnel Roof Slab no. 4 (cast with upper walls)	11.0	11.0	28-Feb-22	11-Mar-22	-349.0	0%	0.0																		
P2-Cal.C	LC18562	Construction of upper walls and roof slab of fixed foam room & sump pit room (RFF)	13.0	13.0	01-Mar-22	15-Mar-22	-332.0	0%	0.0																		
P2-Cal.C	LC18545-21	Stormwater Plant Room Top Slab @ +5.5mPD and upper walls (TS2)	10.0	10.0	04-Mar-22	15-Mar-22	-349.0	0%	-1.0																		
P2-Cal.C	LC18560-11	Construction of Main Tunnel Roof Slab no. 6 (cast with upper walls)	11.0	11.0	03-Mar-22	15-Mar-22	-334.0	0%	0.0																		
P2-Cal.C	LC18575	Backfilling works and waterproofing (4th -0.5mPD to +5.5mPD)	8.0	8.0	16-Mar-22	24-Mar-22	-270.5	0%	0.0																		
P2-Cal.C	LC18570	Installation of waterproofing works to 4th wall and roof	12.0	12.0	16-Mar-22	29-Mar-22	-274.5	0%	0.0																		
P2-Cal.C	LC18590-01	Construction of LV Switch Room / FS Pump Room	31.0	31.0	16-Mar-22	25-Apr-22	-347.0	0%	3.0																		
P2-Cal.C	LC18600	Construction of Electrical Plant Room	43.0	43.0	07-Mar-22	29-Apr-22	-321.0	0%	-13.0																		
P2-Cal.C	LC18580-00	Construction of insitu Concrete Profile Barrier (CH105 - 318) (NCE193 et al)	10.0	114.0	20-Jul-21 A	14-May-22	-333.0	0%	-232.0																		
Footpath, Cycle Track, Road and Drainage Works P2 CH 105 - 318			157.0	82.0	20-Sep-21 A	31-Mar-22	-286.5		-9.0																		
P2-Cal.C	LC18435	Site clearance and vacate site containers and rockfill to 4.8mPD approx at Portion V	45.0	5.0	20-Sep-21 A	24-Dec-21	-307.5	88.89%	-35.0																		
P2-Cal.C	LC18455	Concrete Wall on Coping near DSD Desilting Compound (PMI 343)	34.0	22.0	20-Nov-21 A	17-Jan-22	-227.5	35.29%	-13.0																		
P2-Cal.C	LC18450	Civil provisions for CLP (Portion V)	29.0	29.0	28-Dec-21	31-Jan-22	-307.5	0%	-24.0																		
P2-Cal.C	LC18437	300 DI watermain (alongside P2 CH270 to CH318)	10.0	10.0	04-Feb-22	15-Feb-22	-248.5	0%	5.0																		
P2-Cal.C	LC18455-05	Drainage Outfall	75.0	45.0	15-Nov-21 A	16-Feb-22	-250.5	40%	0.0																		
P2-Cal.C	LC18458	300 DI watermain (cycle track alongside S200 CH941 to P2 CH218)	18.0	18.0	31-Jan-22	23-Feb-22	-255.5	0%	0.0																		
P2-Cal.C	LC18459	Preparation and backfill with rockfill to drainage level (4.0 mPD approx)	26.0	26.0	22-Jan-22	24-Feb-22	-330.0	0%	-14.0																		
P2-Cal.C	LC18453-10	Drainage between SMH9801 to SMH9804 in Portion V	30.0	30.0	04-Feb-22	10-Mar-22	-307.5	0%	-30.0																		
P2-Cal.C	LC18460	Construct drainages (cycle track alongside S200 CH941 to P2 CH218) (3 nos)	30.0	30.0	14-Feb-22	19-Mar-22	-330.0	0%	0.0																		
P2-Cal.C	LC18453	1200mm dia. pipe between SMH9085 to outfall in Portion V	18.0	18.0	11-Mar-22	31-Mar-22	-307.5	0%	12.0																		
E&M Works			127.0	124.0	16-Dec-21 A	26-May-22	-335.0		-14.0																		
Underpass			86.0	86.0	09-Feb-22	26-May-22	-335.0		-14.0																		
Electrical Installation			28.0	28.0	09-Feb-22	12-Mar-22	-323.0		0.0																		
P2-Cal.C	LC19420	Support Installation and Cable Containment Installation for all System (Bay 1 - Bay 4)	28.0	28.0	09-Feb-22	12-Mar-22	-323.0	0%	0.0																		
Ventilation Installation			60.0	60.0	11-Mar-22	26-May-22	-335.0		0.0																		
P2-Cal.C	LC19436	Jet Fan Installation, AQMS Installation and internal T&C	60.0	60.0	11-Mar-22	26-May-22	-335.0	0%	0.0																		
Stormwater Plant Room			69.0	66.0	16-Dec-21 A	12-Mar-22	-278.0		-4.0																		
CLP Switch Room/ Electrical Plant Room Installation			69.0	66.0	16-Dec-21 A	12-Mar-22	-278.0		-4.0																		
P2-Cal.C	LC19458	Electrical Installation in CLP Transformer Room including self T&C and Submission of WR1	12.0	9.0	16-Dec-21 A	31-Dec-21	-278.0	25%	0.0																		
P2-Cal.C	LC19462	Handover to CLP	54.0	54.0	06-Jan-22	12-Mar-22	-278.0	0%	0.0																		

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										12	19	26	02	09	16	23	30	06	13	20	27	03	10					
U-Trough A and B																												
"U-Trough A Type 3 and U-Trough B Type 4" from S200 CH821 to P2 CH105																												
Structure S200 CH821 - CH845 (No Water/Strut) (team 14)																												
P2-Cal.C	LC21200	Backfilling from -0.96 to +5.5mPD (22 layers, 1D/layer)	22.0	22.0	04-Feb-22	01-Mar-22	-206.5	0%	0.0																			
Structure S200 CH845 - CH926 (1 Layer Water/Strut) (team 15)																												
P2-Cal.C	LC21190	Backfilling from +1.0mPD to +5.5mPD (15 Layers, 1D/layer)	15.0	15.0	04-Feb-22	21-Feb-22	-199.5	0%	0.0																			
Structure S200 CH926 - CH969 (2 Layer Water/Strut) (team 16)																												
P2-Cal.C	LC25980-10	Construction of grid beams (Bay 10)	14.0	10.0	10-Dec-21	03-Jan-22	-336.0	28.57%	-4.0																			
P2-Cal.C	LC25990	Remove falsework and formwork for grid beams (Bay 9&10)	14.0	14.0	31-Jan-22	18-Feb-22	-323.5	0%	0.0																			
P2-Cal.C	LC25940	Backfill works from +1.5mPD to +5.5mPD (14 layers, 1D/layer)	14.0	14.0	04-Feb-22	19-Feb-22	-198.5	0%	0.0																			
Structure S200 CH965 - P2 CH105 (3 Layer Water/Strut) (team 14)																												
P2-Cal.C	LC26380	Construction of grid beam (Bay 11)	13.0	19.0	15-Dec-21	13-Jan-22	-342.0	0%	-10.0																			
P2-Cal.C	LC26340	Backfill works from +1.0mPD to +5.5mPD (15 Layers, 1D/layer)	15.0	15.0	04-Feb-22	21-Feb-22	-199.5	0%	0.0																			
P2-Cal.C	LC26480	Remove falsework and formwork for grid beams (Bay 11)	12.0	12.0	11-Feb-22	24-Feb-22	-342.0	0%	0.0																			
Remaining Works																												
P2-Cal.C	LC26460	Construction of Steel Work FADS35 and Civil Provision of TCSS on TADS35	6.0	6.0	25-Feb-22	03-Mar-22	-281.0	0%	0.0																			
P2-Cal.C	LC26405	Installation of BS utilities and lightings on Grid Beams	12.0	12.0	25-Feb-22	10-Mar-22	-298.0	0%	0.0																			
P2-Cal.C	LC26390	Construction of P2 East Side insitu Concrete Profile Barriers (NCE193 et al)	15.0	74.0	31-Jul-21	24-Mar-22	-328.5	0%	-179.0																			
P2-Cal.C	LC26400-10	Construction of P2 West Side insitu Concrete Profile Barriers (NCE193 et al)	1.0	74.0	20-Sep-21	24-Mar-22	-328.5	0%	-150.0																			
Retaining Wall Type W1 S200 CH755 - CH821 / S300 CH326 - CH261																												
Construction of Base Slab (team 17-22)																												
P2-Cal.C	LC21440-064	Construction of Retaining Wall Type W1 (S300 CH274 to CH261 West) (Base Slab Bay 10)	9.0	12.0	15-Dec-21	05-Jan-22	-303.0	0%	-7.0																			
P2-Cal.C	LC21440-061	Construction of Retaining Wall Type W1 (S300 CH313 to CH300) (Base Slab Bay 7)	13.0	13.0	06-Jan-22	20-Jan-22	-303.0	0%	-4.0																			
Construction of 1st Pour Wall (team 17-22)																												
P2-Cal.C	LC21440-114	Construction of Retaining Wall Type W1 (S300 CH274 to CH261 West) (1st pour Wall Bay 10)	11.0	11.0	06-Jan-22	18-Jan-22	-290.0	0%	2.0																			
P2-Cal.C	LC21440-11	Construction of Retaining Wall Type W1 (S200 CH809 to CH821) (1st pour Wall Bay 5)	11.0	11.0	13-Jan-22	25-Jan-22	-307.0	0%	0.0																			
P2-Cal.C	LC21440-111	Construction of Retaining Wall Type W1 (S300 CH313 to CH300) (1st pour Wall Bay 7)	9.0	9.0	21-Jan-22	31-Jan-22	-303.0	0%	4.0																			
P2-Cal.C	LC21440-10	Construction of Retaining Wall Type W1 (S200 CH795 to CH809) (1st pour Wall Bay 4)	11.0	11.0	26-Jan-22	10-Feb-22	-307.0	0%	0.0																			
Remaining Works																												
P2-Cal.C	LC21450	Removal of temporary site road (after finish of tentative period of shared access with C1 Contractor under PMI.360)	6.0	6.0	13-Jan-22	19-Jan-22	-349.0	0%	0.0																			
P2-Cal.C	LC21450-01	Rockfill and lay Type A material to drainage bedding from 2.50mPD	16.0	16.0	20-Jan-22	10-Feb-22	-349.0	0%	0.0																			
P2-Cal.C	LC21450-02	Construct drainage Manholes SMH9402 to SMH9404	24.0	24.0	11-Feb-22	10-Mar-22	-349.0	0%	0.0																			
P2-Cal.C	LC21450-03	Construct drainage pipes (SMH9402 to SMH9404)	12.0	12.0	11-Mar-22	24-Mar-22	-349.0	0%	0.0																			
"U-Trough A Type 1 & 2" from S200 CH674 - CH821, S100/CH280, S300/CH403.5 & S400/CH158.1																												
Remaining Works																												
P2-Cal.C	LC23350-01	Construction of Insitu Concrete Profile Barrier for S200 CH707-CH674 (NCE193 & NCE219)	16.0	16.0	20-Dec-21	10-Jan-22	-243.5	0%	0.0																			
P2-Cal.C	LC23350-017	Insitu Concrete Profile Barrier Construction for S300 CH403-S300 CH355 (6moulds) (NCE193&NCE219)	16.0	34.0	16-Nov-21	31-Jan-22	-345.0	0%	-47.0																			
P2-Cal.C	LC23350-015	Insitu Concrete Profile Barrier Construction for S400 CH158-S300 CH326 (6moulds) (NCE193&NCE219)	9.0	34.0	16-Nov-21	31-Jan-22	-345.0	0%	-54.0																			

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Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur	Start	Finish	Total Float	Activity % Complete	Variance - Act. Duration	Gantt Chart											
										December 2021	12	19	26	January 2022	02	09	16	23	30	February 2022	06
P2-Cal.C	LC23360	Construction of Steel Work DS22 and Civil Provision of TCSS on DS22	6.0	6.0	04-Feb-22	10-Feb-22	-277.0	0%	0.0	Construction of Steel Work DS22 and Civil Provision of TCSS on DS22											
P2-Cal.C	LC23350-012	Drainage works (S200 CH755 - CH707) (affected by PM1360)	22.0	22.0	13-Jan-22	10-Feb-22	-349.0	0%	0.0	Drainage works (S200 CH755 - CH707) (affected by PM1360)											
P2-Cal.C	LC23350-011	Installation of Precast Concrete Profile Barrier for S200 CH707-CH674	25.0	25.0	13-Jan-22	14-Feb-22	-243.5	0%	0.0	Installation of Precast Concrete Profile Barrier for S200 CH707-CH674											
P2-Cal.C	LC23370	Installation of Directional Sign DS22	6.0	6.0	11-Feb-22	17-Feb-22	-277.0	0%	0.0	Installation of Directional Sign DS22											
P2-Cal.C	LC23410	Construction of Civil Provision for CCTV on High Mast	6.0	6.0	18-Feb-22	24-Feb-22	-202.5	0%	0.0	Construction of Civil Provision for CCTV on High Mast											
P2-Cal.C	LC23410-01	Construction of Civil Provision of Controller Cabinet and Earthing Provision	15.0	15.0	16-Feb-22	04-Mar-22	-259.5	0%	0.0	Construction of Civil Provision of Controller Cabinet and Earthing Provision											
P2-Cal.C	LC23355-10	Drainage works ((S300 CH403 - S300 CH355 and S400 CH158 - S300 CH326)	26.0	26.0	04-Feb-22	05-Mar-22	-345.0	0%	0.0	Drainage works ((S300 CH403 - S300 CH355 and S400 CH158 - S300 CH326)											
P2-Cal.C	LC23350-013	Backfill from drainage level up to road formation (6.3mPD to 9.9mPD between S200 CH755 - CH707) (3 Bays x 7x1layer/d)	21.0	21.0	11-Feb-22	07-Mar-22	-332.0	0%	0.0	Backfill from drainage level up to road formation (6.3mPD to 9.9mPD between S200 CH755 - CH707) (3 Bays x 7x1layer/d)											
P2-Cal.C	LC23350-013-01	Construction of Insitu Concrete Profile Barrier for S200 CH707 - CH755 (NCE193 & NCE219)	24.0	24.0	08-Mar-22	04-Apr-22	-332.0	0%	0.0	Construction of Insitu Concrete Profile Barrier for S200 CH707 - CH755 (NCE193 & NCE219)											
P2-Cal.C	LC23350-02	Road Furniture (S200 CH755 - S200 CH674/S400 CH158/S100 CH280/S300 CH403)	50.0	50.0	05-Mar-22	07-May-22	-259.5	0%	0.0	Road Furniture (S200 CH755 - S200 CH674/S400 CH158/S100 CH280/S300 CH403)											
P2-Cal.C	LC23355-20	Backfill from drainage to formation level (S300 CH403 - S300 CH355 and S400 CH158 - S300 CH326) (6 Bays x 9 x1layer/d)	54.0	54.0	07-Mar-22	14-May-22	-345.0	0%	0.0	Backfill from drainage to formation level (S300 CH403 - S300 CH355 and S400 CH158 - S300 CH326) (6 Bays x 9 x1layer/d)											
U-Trough C Structures			124.0	84.0	13-Nov-21 A	02-Apr-22	-264.5		-4.0												
"U-Trough C Type 1, 2, 3 & 4" from CT01 CH117.156 - CH366			124.0	84.0	13-Nov-21 A	02-Apr-22	-264.5		-4.0												
ELS & Structure "U-Trough C Type 1, 2, 3 & 4" from CT01 CH117.156 - CH366			73.0	33.0	13-Nov-21 A	29-Jan-22	-263.5		1.0												
Base Slab (Team 29)			28.0	17.0	07-Dec-21 A	11-Jan-22	-326.0		-4.0												
P2-Cal.C	LC23580	Construction of Cycle Track Bay 11 Base Slab CT01 CH251 to CH238	12.0	5.0	07-Dec-21 A	24-Dec-21	-326.0	58.33%	-4.0	Construction of Cycle Track Bay 11 Base Slab CT01 CH251 to CH238											
P2-Cal.C	LC23590	Construction of Cycle Track Bay 12 Base Slab CT01 CH238 to CH226	12.0	12.0	28-Dec-21	11-Jan-22	-326.0	0%	0.0	Construction of Cycle Track Bay 12 Base Slab CT01 CH238 to CH226											
1st Wall (Team 30)			73.0	33.0	13-Nov-21 A	29-Jan-22	-263.5		1.0												
P2-Cal.C	LC23775	Construction of Cycle Track Bay 9 Wall (West) CT01 CH270 - CH260	12.0	4.0	13-Nov-21 A	23-Dec-21	-315.0	66.67%	-23.0	Construction of Cycle Track Bay 9 Wall (West) CT01 CH270 - CH260											
P2-Cal.C	LC23860	Construction of Cycle Track Bay 18 Wall CT01 CH165 to CH153	14.0	7.0	29-Nov-21 A	29-Dec-21	-317.0	50%	-11.0	Construction of Cycle Track Bay 18 Wall CT01 CH165 to CH153											
P2-Cal.C	LC23870	Construction of Cycle Track Bay 19 Wall CT01 CH153 to CH141	14.0	7.0	29-Nov-21 A	29-Dec-21	-317.0	50%	-11.0	Construction of Cycle Track Bay 19 Wall CT01 CH153 to CH141											
P2-Cal.C	LC23770	Construction of Cycle Track Bay 9 Wall (East) CT01 CH270 to CH 260	21.0	15.0	13-Nov-21 A	08-Jan-22	-330.0	28.57%	-25.0	Construction of Cycle Track Bay 9 Wall (East) CT01 CH270 to CH 260											
P2-Cal.C	LC23810	Construction of Cycle Track Bay 13 Wall CT01 CH226 to CH213	12.0	12.0	23-Dec-21	08-Jan-22	-317.0	0%	0.0	Construction of Cycle Track Bay 13 Wall CT01 CH226 to CH213											
P2-Cal.C	LC23880	Construction of Cycle Track Bay 20 Wall CT01 CH141 to CH129	14.0	14.0	30-Dec-21	15-Jan-22	-307.5	0%	0.0	Construction of Cycle Track Bay 20 Wall CT01 CH141 to CH129											
P2-Cal.C	LC23890	Construction of Cycle Track Bay 21 Wall CT01 CH129 to CH117	14.0	14.0	30-Dec-21	15-Jan-22	-307.5	0%	0.0	Construction of Cycle Track Bay 21 Wall CT01 CH129 to CH117											
P2-Cal.C	LC23780	Construction of Cycle Track Bay 10 Wall (East) CT01 CH260 to CH251	12.0	12.0	08-Jan-22	21-Jan-22	-330.0	0%	4.0	Construction of Cycle Track Bay 10 Wall (East) CT01 CH260 to CH251											
P2-Cal.C	LC23785	Construction of Cycle Track Bay 10 Wall (West) CT01 CH260 to CH251	12.0	12.0	08-Jan-22	21-Jan-22	-330.0	0%	0.0	Construction of Cycle Track Bay 10 Wall (West) CT01 CH260 to CH251											
P2-Cal.C	LC23790	Construction of Cycle Track Bay 11 Wall (East) CT01 CH251 to CH238	12.0	12.0	12-Jan-22	25-Jan-22	-259.5	0%	4.0	Construction of Cycle Track Bay 11 Wall (East) CT01 CH251 to CH238											
P2-Cal.C	LC23795	Construction of Cycle Track Bay 11 Wall (West) CT01 CH251 to CH238	12.0	12.0	12-Jan-22	25-Jan-22	-330.0	0%	4.0	Construction of Cycle Track Bay 11 Wall (West) CT01 CH251 to CH238											
P2-Cal.C	LC23800	Construction of Cycle Track Bay 12 Wall CT01 CH238 to CH226	12.0	12.0	17-Jan-22	29-Jan-22	-330.0	0%	0.0	Construction of Cycle Track Bay 12 Wall CT01 CH238 to CH226											
Footpath, Cycle Track, Road and Drainage Works CT01 CH117.156 - CH366			58.0	58.0	22-Jan-22	02-Apr-22	-264.5		0.0												
P2-Cal.C	LC24112	Rockfill / General backfill for Bay 9, 10 (1056m³ approx)	16.0	16.0	22-Jan-22	12-Feb-22	-328.5	0%	0.0	Rockfill / General backfill for Bay 9, 10 (1056m³ approx)											
P2-Cal.C	LC24113-10	Rockfill between Bay 15 and 21 to drainage level	6.0	6.0	14-Feb-22	19-Feb-22	-328.5	0%	0.0	Rockfill between Bay 15 and 21 to drainage level											
P2-Cal.C	LC24113	Rockfill for Bay 11 - 15 to formation (5mPD to 8mPD approx)	14.0	14.0	14-Feb-22	01-Mar-22	-300.5	0%	0.0	Rockfill for Bay 11 - 15 to formation (5mPD to 8mPD approx)											
P2-Cal.C	LC24115-01	Civil Provisions for Waterproof MCCB and Public Lighting Pillar Box to Power Supply (PM1196 and 248)	20.0	20.0	14-Feb-22	08-Mar-22	-288.0	0%	0.0	Civil Provisions for Waterproof MCCB and Public Lighting Pillar Box to Power Supply (PM1196 and 248)											
P2-Cal.C	LC24115-04	BS Road lighting ducts and TCSS power ducts and drawpits for C1 at CH270 to CH366 (PM1248)	20.0	20.0	14-Feb-22	08-Mar-22	-242.5	0%	0.0	BS Road lighting ducts and TCSS power ducts and drawpits for C1 at CH270 to CH366 (PM1248)											
P2-Cal.C	LC24115-02	Installation of MCCB Board in Pillar Box (By others) (PM1196 and 248)	10.0	10.0	09-Mar-22	19-Mar-22	-288.0	0%	0.0	Installation of MCCB Board in Pillar Box (By others) (PM1196 and 248)											
P2-Cal.C	LC24115-03	TCSS cross road ductings, TCSS drawpits (PM1 248)	10.0	10.0	09-Mar-22	19-Mar-22	-252.5	0%	0.0	TCSS cross road ductings, TCSS drawpits (PM1 248)											

■ Actual Work ◆ B
■ Remaining Work ◆ M
■ Critical Remaining Work

**NE/2015/02 Tseung Kwan O - Lam Tin
Tunnel-Road P2
and Associated Works**

**3 Months Rolling Programme Update
(Data Date : 20 Dec 2021)**

Date	Revision	Chec...	Approved
20-De...			

Calendar	Activity ID	Activity Name	Original Duration	Remaining Dur.	Start	Finish	Total Float	Activity % Complete	Variance - vs. Duration	2021														
										December	January			February			March							
										12	19	26	02	09	16	23	30	06	13	20	27	06	13	
P2-Cal.C	LC24114	Drainages and manholes between Bay 15 and Bay 21 (4 nos)	36.0	36.0	21-Feb-22	02-Apr-22	-328.5	0%	0.0															
Associated Works																								
P2-Cal.C	LC25550	Installation of Watermains DN250 for C1 (remaining sections)	3.0	3.0	04-Jan-22	06-Jan-22	-247.0	0%	0.0															
P2-Cal.C	LC25550-02	Testing of DN250 Watermain (between P2 CH821 to C3 connections)	22.0	22.0	07-Jan-22	04-Feb-22	-247.0	0%	0.0															
P2-Cal.C	LC25550-04	Works area ready for connection of watermain by C2 (PMI341)	0.0	0.0	05-Feb-22		-247.0	0%	0.0															
P2-Cal.A	LC25570	Submission of WW0542	14.0	14.0	23-Jan-22	05-Feb-22	-303.0	0%	0.0															
P2-Cal.C	LC25550-05	DN250 watermain C2/C3 connection by C2	1.0	1.0	05-Feb-22	05-Feb-22	-247.0	0%	0.0															
P2-Cal.C	LC25550-06	Testing for whole pipeline C1/C2/C3 before final connection	3.0	3.0	07-Feb-22	09-Feb-22	446.0	0%	0.0															
P2-Cal.C	LC25550-01	Installation of Watermains DN300 for CBL	8.0	8.0	31-Jan-22	11-Feb-22	-245.5	0%	0.0															
P2-Cal.C	LC25210-05	VE Panels for Internal wall of U-trough structure SR2 CH200 - 250 and P2 CH430-500 (VE and PC Panel)	30.0	30.0	05-Jan-22	11-Feb-22	-218.5	0%	-4.0															
P2-Cal.C	LC25210-04	VE Panels for Internal wall of S200 CH821 to CH941	24.0	24.0	19-Jan-22	18-Feb-22	-218.5	0%	2.0															
P2-Cal.C	LC25550-10	Internal Testing for Watermains DN300 for CBL	24.0	24.0	24-Feb-22	23-Mar-22	-255.5	0%	0.0															
P2-Cal.C	LC25210-00-10	VE and PC Panels Installation for Internal wall of underpass structure CH941 - CH997	36.0	36.0	02-Mar-22	13-Apr-22	-328.5	0%	-36.0															
Section 5 of the Works - Landscaping Works																								
Landscape Softwork																								
P2-Cal.C	LC25380	Landscape Softworks for U-Trough C	81.0	81.0	08-Mar-22	17-Jun-22	-292.5	0%	0.0															

- Actual Work
- Remaining Work
- Critical Remaining Work

- B
- M

NE/2015/02 Tseung Kwan O - Lam Tin
Tunnel-Road P2
and Associated Works

3 Months Rolling Programme Update
(Data Date : 20 Dec 2021)

Date	Revision	Chec...	Approved
20-De...			

High Level 3 Months Look Ahead Programme			
Activities	Jan -21	Feb -21	March-21
Trial pit			
Underground utilities detection			
Temporary traffic arrangement Setup			
Road construction			
Asphalt Paving			
Pier, Staircase and lift shaft construction			
Bridge Construction			

Activity ID	Activity Name	Planned Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float	Classic Schedule Layout											
								Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul		
NE/2017/06 TKO-LTT TCSS_3MRP																			
NE/2017/06.CW Contract Award / Commencement of Works																			
NE/2017/06.AD Access Date																			
NE/2017/06.AD.000 General																			
NE/2017/06.AD.000.AD Access Date																			
DWP10672	Portion 1B of the Site	0	0	0%	30-Dec-21*	30-Dec-21	-248										◆ Portion 1B of the Site, 30-Dec-21*		
DWP10674	Portion 1C of the Site	0	0	0%	30-Dec-21*	30-Dec-21	-302										◆ Portion 1C of the Site, 30-Dec-21*		
DWP10676	Portion 2A of the Site	0	0	0%	30-Dec-21*	30-Dec-21	-240										◆ Portion 2A of the Site, 30-Dec-21*		
DWP10680	Portion 3A of the Site	0	0	0%	30-Dec-21*	30-Dec-21	-279										◆ Portion 3A of the Site, 30-Dec-21*		
NE/2017/06.KD Key Date and Stages / Sections of the Achievement																			
NE/2017/06.KD.000 General																			
NE/2017/06.KD.000.03 Key Date and Stages / Sections of the Achievement																			
NE/2017/06.MD Cost Centre Milestone Dates																			
NE/2017/06.MD.1 General																			
NE/2017/06.MD.1.1 CC B - Central System - TKOLTT																			
NE/2017/06.MD.1.2 CC B1 - Central System - CBL																			
NE/2017/06.MD.1.3 CC C - Traffic Control Devices - TKOLTT																			
NE/2017/06.MD.1.4 CC C1 - Traffic Control Devices - CBL																			
NE/2017/06.MD.1.5 CC D - Communication System - TKOLTT																			
NE/2017/06.MD.1.6 CC D1 - Communication System - CBL																			
NE/2017/06.MD.1.7 CC E - CCTV System - TKOLTT																			
NE/2017/06.MD.1.8 CC E1 - CCTV System - CBL																			
NE/2017/06.MD.1.9 CC F - Building PABX System - TKOLTT																			
NE/2017/06.MD.1.11 CC G - ET System - TKOLTT																			
NE/2017/06.MD.1.10 CC H - PA System - TKOLTT																			
NE/2017/06.MD.1.12 CC I - Radio System - TKOLTT																			
NE/2017/06.MD.1.13 CC J - Detection System - TKOLTT																			
NE/2017/06.MD.1.15 CC J1 - Detection System - CBL																			
NE/2017/06.MD.1.14 CC K - Manual Fallback System - TKOLTT																			
DWP9640	Complete order and delivery on Site of all equipment for Works	0	0	0%	30-Dec-21	30-Dec-21	-185										◆ Complete order and delivery on Site of all equipment for Works,		
NE/2017/06.MD.1.16 CC L - Operation Facilities - TKOLTT																			
NE/2017/06.MD.1.17 CC M - Power Distribution System - TKOLTT																			
DWP9820	Complete order and delivery on Site of all equipment for Works	0	0	0%	30-Dec-21	30-Dec-21	-185										◆ Complete order and delivery on Site of all equipment for Works,		
NE/2017/06.MD.1.18 CC M1 - Power Distribution System - CBL																			
NE/2017/06.MD.1.19 CC N - Speed Enforcement System - TKOLTT																			
DWP9950	Complete Bench Acceptance Test	0	0	0%	29-Jan-22	29-Jan-22	-216										◆ Complete Bench Acceptance Test,		
DWP9952	Complete Site Commissioning Test	0	0	0%	29-Jan-22	29-Jan-22	-216										◆ Complete Site Commissioning Test,		
NE/2017/06.MD.1.20 CC N1 - Speed Enforcement System - CBL																			
DWP10410	Acceptance of Factory Acceptance Tests of all equipment for Works	0	0	0%	30-Dec-21	30-Dec-21	247										◆ Acceptance of Factory Acceptance Tests of all equipment for Works,		
NE/2017/06.MD.1.21 CC O - Government Optical Fibre System - TKOLTT																			
NE/2017/06.MD.1.22 CC O1 - Government Optical Fibre System - CBL																			
NE/2017/06.MD.1.23 CC P - Training and Documentation - TKOLTT																			
DWP10210	Acceptance of all Factory Acceptance Tests Reports	0	0	0%	30-Dec-21	05-Jan-22	-76										◆ Acceptance of all Factory Acceptance Tests Reports,		
DWP10220	Acceptance of all Training Manuals	0	0	0%	30-Dec-21	05-Jan-22	-76										◆ Acceptance of all Training Manuals,		
NE/2017/06.MD.1.24 CC P1 - Training and Documentation - CBL																			
DWP10150	Acceptance of all Factory Acceptance Tests Reports	0	0	0%	30-Dec-21	30-Dec-21	247										◆ Acceptance of all Factory Acceptance Tests Reports,		
NE/2017/06.MD.1.25 CC Q - Comprehensive Maintenance Services and DLP - TKOLTT																			
NE/2017/06.MD.1.26 CC Q1 - Comprehensive Maintenance Services and DLP - CBL																			
NE/2017/06.1 Preliminary																			
NE/2017/06.1.A0 Preliminary and General																			
NE/2017/06.1.A0.GEN General																			
NE/2017/06.1.A0.3 Management System																			
NE/2017/06.1.A0.3.0QP Quality Management Plan																			
NE/2017/06.1.A0.3.2 Safety Management																			
GEN.0.05C	Prepare and submit the Materials - Personal Protective Equipment for Resident Engineer	12	12	0%	30-Dec-21	11-Jan-22	717										Prepare and submit the Materials - Personal Protective Equipment for Resident Engineer		
GEN.0.05D	Prepare and submit the Site Traffic Safety Management Plan	17	17	0%	30-Dec-21	16-Jan-22	712										Prepare and submit the Site Traffic Safety Management Plan		
NE/2017/06.1.A0.3.1 Environment; Management Plan																			
NE/2017/06.1.A0.3.3 Sub-Contract Management																			
NE/2017/06.1.A0.3.4 Risk Management																			
NE/2017/06.1.A0.3.5 Software Management																			
NE/2017/06.1.A0.3.6 Interface Management																			
NE/2017/06.DS Design Stage																			
NE/2017/06.DS.PSP Prepare / Submission of PSP for TKO-LTT TCSS and CBL TCSS																			
NE/2017/06.DS.FSP Prepare / Submission of FSP For TKO-LTT TCSS and CBL TCSS																			
NE/2017/06.DS.FDS Preparation of Functional Design Specification (FDS)																			
NE/2017/06.DS.SWD Software Development (except GUI) for TKO-LTT TCSS and CBL TCSS																			
NE/2017/06.DS.GUI GUI Development for TKO-LTT TCSS and CBL TCSS																			
NE/2017/06.DS.FAT Preparation / Submission of FAT Procedures																			
NE/2017/06.DS.SCT Preparation / Submission of SCT Procedures																			
NE/2017/06.DS.SCT.1 Central System																			
DWP8260	Preparation & Submission of Central System SCT Procedure	28	28	0%	30-Dec-21	26-Jan-22	140										Preparation & Submission of Central System SCT Procedure		
DWP8270	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	27-Jan-22	23-Feb-22	140										Comment on SCT Procedure / Meeting With Engineer		
NE/2017/06.DS.SCT.2 Traffic Control Devices																			
DWP8300	Preparation & Submission of Traffic Control System SCT Procedure	28	28	0%	30-Dec-21	26-Jan-22	-323										Preparation & Submission of Traffic Control System SCT Procedure		
DWP8310	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	27-Jan-22	23-Feb-22	-323										Comment on SCT Procedure / Meeting With Engineer		
NE/2017/06.DS.SCT.3 Communication System																			
DWP8340	Preparation & Submission of Communication System SCT Procedure	28	14	53.57%	15-Dec-21 A	12-Jan-22	-323										Preparation & Submission of Communication System SCT Procedure		
DWP8350	Comment on SCT Procedure / Meeting With Engineer	28	28	0%	13-Jan-22	09-Feb-22	-323										Comment on SCT Procedure / Meeting With Engineer		
DWP8360	Resubmission of SCT Procedure	14	14	0%	10-Feb-22	23-Feb-22	-323										Resubmission of SCT Procedure		

Activity ID	Activity Name	Planned Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float	Classic Schedule Layout																	
								Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul								
DWP4570	Turn-on Radio Sign	14	14	0%	27-Jan-22	09-Feb-22	-248																		
DWP4580	Manual Barrier	14	14	0%	10-Feb-22	23-Feb-22	-248																		
NE/2017/06.CST.S1A1B.1B.3.2 FVMS- FVMS/101/A																									
DWP4440	Assembly of FVMS at nearby area	2	2	0%	30-Dec-21	01-Jan-22	-199																		
DWP4450	Erect the FVMS on Gantry	1	1	0%	01-Jan-22	02-Jan-22	-199																		
NE/2017/06.CST.S1A1B.1B.3.1 FVMS- FVMS/102/A																									
DWP4460	Assembly of FVMS at Nearby Area	2	2	0%	02-Jan-22	04-Jan-22	-199																		
DWP4470	Erect the FVMS on Gantry	1	1	0%	04-Jan-22	05-Jan-22	-199																		
NE/2017/06.CST.S1A1B.1B.4 Installation of Leaky Cable and Radio Equipment																									
DWP4590	Leaky Cable inside Tunnel / Underpass	14	14	0%	17-Jan-22	01-Feb-22	-113																		
NE/2017/06.CST.S1A1B.1B.5 Installation of CCTV																									
DWP4600	Erect CCTV Highmasts	14	14	0%	30-Dec-21	12-Jan-22	-217																		
NE/2017/06.CST.S1A1B.1B.6 Installation of Vehicle Detectors																									
DWP4650	Erect Poles for OHVD	7	7	0%	30-Dec-21	05-Jan-22	-206																		
DWP4660	OHVD	7	7	0%	06-Jan-22	12-Jan-22	-206																		
NE/2017/06.CST.S1A1B.1B.7 Installation of ET Equipment inside Tunnel																									
NE/2017/06.CST.S1A1B.1B.8 Installation of PA Equipment																									
DWP7790	Installation of PA Equipment	14	14	0%	04-Jan-22	17-Jan-22	-211																		
NE/2017/06.CST.S1A1B.1B.9 Installation of Enforcement Equipment																									
DWP4665	Installation of Enforcement Equipment	5	5	0%	30-Dec-21	03-Jan-22	-211																		
DWP4670	SEC inside Tunnel	7	7	0%	30-Dec-21	05-Jan-22	-216																		
DWP4680	WeightBridge	7	7	0%	30-Dec-21	05-Jan-22	-216																		
NE/2017/06.CST.S1A1B.1B.10 Installation of Control Cabinet																									
DWP4700	Control Cabinets for SEC	7	7	0%	06-Jan-22	12-Jan-22	-223																		
NE/2017/06.CST.S1A1B.1B.11 Local Cables Installation, Testing and Termination																									
DWP4710	Cables Installation, Testing and Termination at TCSS Cabinet	10	10	0%	13-Jan-22	09-Feb-22	-234																		
DWP4720	Cabinet Installation, Testing and Termination at SEC Cabinet	10	10	0%	13-Jan-22	22-Jan-22	-223																		
DWP4730	Fibre Cable Termination	7	7	0%	03-Feb-22	09-Feb-22	-234																		
NE/2017/06.CST.S1A1B.1B.12 Site Commissioning Test of TCD and fibre Cable																									
DWP4740	SCT for Power Distribution Equipment	7	7	0%	28-Jan-22	04-Feb-22	-222																		
DWP4760	SCT for ET inside Tunnel	7	7	0%	05-Jan-22	12-Jan-22	-198																		
DWP4770	SCT for PA Equipment	7	7	0%	18-Jan-22	24-Jan-22	-211																		
DWP4780	SCT for CCTV	7	7	0%	28-Jan-22	04-Feb-22	-222																		
DWP4790	SCT for VD	7	7	0%	28-Jan-22	04-Feb-22	-222																		
DWP4800	SCT for OHVD	7	7	0%	28-Jan-22	04-Feb-22	-222																		
DWP4810	SCT For SEC	7	7	0%	23-Jan-22	29-Jan-22	-216																		
DWP4820	SCT for Weighbridge	7	7	0%	23-Jan-22	29-Jan-22	-216																		
DWP4830	Fibre Cable Test (End to End)	7	7	0%	10-Feb-22	16-Feb-22	-234																		
NE/2017/06.CST.S1A1B.1C Stage 1C Works (EVb and WVb within Portion 1C)																									
DWP4840	Portion 1C Access Date	0	0	0%	30-Dec-21	30-Dec-21	-302																		
DWP4850	Inspection of Civil provisions and Submit Inspection Report	7	7	0%	30-Dec-21	05-Jan-22	-302																		
DWP4860	Rectifications of Civil Provisions Defects by others	3	3	0%	06-Jan-22	08-Jan-22	-302																		
DWP4870	Installation of Cable Containment	7	7	0%	09-Jan-22	15-Jan-22	-253																		
DWP4880	Laying Cables (fibre backbone, power)	10	10	0%	16-Jan-22	25-Jan-22	-253																		
DWP4890	Test of Cables (signal and power)	3	3	0%	18-Feb-22	21-Feb-22	-253																		
NE/2017/06.CST.S1A1B.1C.5 Site Commissioning Test of Fibre Cable																									
NE/2017/06.CST.S1A1B.1C.2 West Ventilation Building																									
DWP4910	Installation of Equipment Rack	8	8	0%	09-Jan-22	16-Jan-22	-220																		
DWP4920	Installation of Communication Node Equipment	10	10	0%	16-Jan-22	26-Jan-22	-220																		
DWP4930	Installation of PABX Equipment	10	10	0%	09-Jan-22	18-Jan-22	-212																		
DWP4940	Installation of PA Equipment	10	10	0%	09-Jan-22	18-Jan-22	-212																		
DWP4950	Installation of ET Equipment	10	10	0%	09-Jan-22	18-Jan-22	-212																		
DWP4960	Installation of Radio Equipment (Incl. Antenna and Feeder)	10	10	0%	09-Jan-22	18-Jan-22	-212																		
DWP4970	Installation of Operation Facilities Equipment	10	10	0%	09-Jan-22	18-Jan-22	-212																		
DWP4975	Installation of TCS Computer Equipment	50	50	0%	09-Jan-22	27-Feb-22	-302																		
NE/2017/06.CST.S1A1B.1C.1 Sub-systems Site Commissioning Test																									
NE/2017/06.CST.S1A1B.1C.3 East Ventilation Building																									
DWP5100	Installation of PABX Equipment	10	10	0%	09-Jan-22	18-Jan-22	-212																		
DWP5110	Installation of PA Equipment	10	10	0%	09-Jan-22	18-Jan-22	-212																		
DWP5120	Installation of ET Equipment	10	10	0%	09-Jan-22	18-Jan-22	-212																		
DWP5130	Installation of Radio Equipment (Incl. Antenna and Feeder)	10	10	0%	09-Jan-22	18-Jan-22	-212																		
DWP5140	Installation of Operation Facilities Equipment	14	14	0%	09-Jan-22	22-Jan-22	-216																		
NE/2017/06.CST.S1A1B.1C.4 Sub-systems Site Commissioning Test-1																									
NE/2017/06.CST.S1A1B.2A Stage 2A Works (Within Portion 2A)																									
DWP5790	Handover of Holding-down Bolts for Pole Foundation to Civil	1	1	0%	30-Dec-21	31-Dec-21	729																		
DWP5810	Inspection of Civil Provisions and Submit Inspection Report	10	10	0%	30-Dec-21	08-Jan-22	-240																		
DWP5820	Rectification of Civil Provisions Defects by others	7	7	0%	09-Jan-22	15-Jan-22	-240																		
NE/2017/06.CST.S1A1B.2A.1 Laying Cables (Fibre , Signal and Power)																									
DWP5675	Laying Cables (Fibre , Signal and Power)	16	16	0%	16-Jan-22	31-Jan-22	-235																		
NE/2017/06.CST.S1A1B.2A.1.1 Installation of Cable Containment																									
DWP5680	Cable Containment on Gantry	8	8	0%	16-Jan-22	23-Jan-22	-235																		
NE/2017/06.CST.S1A1B.2A.1.2 Laying Cables																									
DWP5670	Fibre, Signal and Power Cables along Roadside	8	8	0%	23-Jan-22	31-Jan-22	-235																		
NE/2017/06.CST.S1A1B.2A.2 Installation of Traffic Control Field Equipment																									
DWP5940	MLCS	5	5	0%	16-Jan-22	20-Jan-22	-223																		
DWP5950	Roadside VMS	5	5	0%	21-Jan-22	25-Jan-22	-223																		
DWP5960	Tunnel Closed Sign	5	5	0%	26-Jan-22	30-Jan-22	-223																		
NE/2017/06.CST.S1A1B.2A.2.1 FVMS - FVMS/201/A																									
DWP5920	Assembly of FVMS at Nearby Area	4	4	0%	16-Jan-22	19-Jan-22	-212																		

■ Actual Level of Effort
■ Remaining Work
■ Critical Remaining Work
◆ Milestone

Activity ID	Activity Name	Planned Duration	Remaining Duration	Schedule % Complete	Start	Finish	Total Float	Calendar																
								Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul							
DWP6130	Laying Cables on Gantries	7	7	0%	06-Feb-22	12-Feb-22	-255																	
DWP6140	Fibre, Signal and Power Cables along Roadside	21	21	0%	23-Jan-22	12-Feb-22	-255																	
NE/2017/06.CST.S1A1B.4A.2 Installation of Traffic Control Field Equipment																								
DWP5660	VLSL	3	3	0%	23-Jan-22	25-Jan-22	-220																	
DWP5665	Roadside VMS	5	5	0%	26-Jan-22	30-Jan-22	-220																	
NE/2017/06.CST.S1A1B.4A.3 Installation of CCTV																								
DWP6040	Assembly and erect CCTV Highmast for CCTV-TV/201/A	7	7	0%	23-Jan-22	29-Jan-22	-248																	
DWP6050	CCTV-TV /201/A	5	5	0%	30-Jan-22	03-Feb-22	-248																	
DWP6060	Assembly and erect CCTV Highmast for CCTV-TV/202/A	7	7	0%	04-Feb-22	10-Feb-22	-248																	
DWP6070	CCTV-TV /202/A	5	5	0%	11-Feb-22	15-Feb-22	-248																	
DWP6080	Assembly and erect CCTV Highmast for CCTV-TV/245/C	7	7	0%	16-Feb-22	22-Feb-22	-248																	
DWP6090	CCTV-TV /245/C	5	5	0%	23-Feb-22	27-Feb-22	-248																	
NE/2017/06.CST.S1A1B.4A.4 Installation of Vehicle Detectors																								
DWP6100	Erect VD Pole for VD/202/A	7	7	0%	23-Jan-22	29-Jan-22	-226																	
DWP6110	VD/202/A	7	7	0%	30-Jan-22	05-Feb-22	-226																	
NE/2017/06.CST.S1A1B.4A.5 Installation of Control Cabinet																								
DWP7860	Installation of Control Cabinet	14	14	0%	23-Jan-22	05-Feb-22	-247																	
NE/2017/06.CST.S1A1B.4A.6 Local Cables Installation, Testing and Termination																								
DWP5610	Fibre Cable Termination	14	14	0%	06-Feb-22	19-Feb-22	-247																	
NE/2017/06.CST.S1A1B.4A.7 Site Commissioning Test of TCD and Fibre Cable																								
NE/2017/06.CST.S1A1B.4B Stage 4B Works (Bridges within Portion 4B)																								
DWP6220	Handover of Holding-down Bolts for Pole Foundation to Civil	3	3	0%	30-Dec-21	01-Jan-22	727																	
DWP6230	Inspection of Civil Provisions and Submit Inspection Report	7	7	0%	30-Dec-21	05-Jan-22	-216																	
DWP6260	Rectification of Civil Provisions Defects by others	7	7	0%	06-Jan-22	12-Jan-22	-216																	
DWP6270	Laying Cables (Fibre, Signal and Power) along Roadside	7	7	0%	13-Jan-22	19-Jan-22	-216																	
NE/2017/06.CST.S1A1B.4B.4 Installation of Vehicle Detectors																								
DWP6200	Erect VD Pole for VD/105/A	3	3	0%	13-Jan-22	15-Jan-22	-216																	
DWP6210	VD/105/A	7	7	0%	16-Jan-22	22-Jan-22	-216																	
NE/2017/06.CST.S1A1B.4B.6 Local Cables Installation, Testing and Termination																								
DWP7870	Installation of Control Cabinet	1	1	0%	13-Jan-22	14-Jan-22	-214																	
NE/2017/06.CST.S1A1B.4B.7 Site Commissioning Test of TCD and Fibre Cable																								
DWP6145	Local Cables Installation (fibre, signal and power) along Roadside	3	3	0%	20-Jan-22	22-Jan-22	-216																	
DWP6150	Cables Installation, Testing and Termination at TCSS Cabinet	3	3	0%	23-Jan-22	25-Jan-22	-216																	
DWP6160	Fibre Cable Termination	7	7	0%	14-Jan-22	21-Jan-22	-214																	
NE/2017/06.CST.S1A1B.4B.7 Site Commissioning Test of TCD and Fibre Cable																								
DWP6170	SCT for Power Distribution Equipment	3	3	0%	26-Jan-22	28-Jan-22	-215																	
DWP6180	SCT for VD	4	4	0%	26-Jan-22	29-Jan-22	-216																	
DWP6190	Fibre Cable Test (End to End)	7	7	0%	21-Jan-22	28-Jan-22	-214																	
NE/2017/06.SATT SAT for TKO-LTT TCSS																								
NE/2017/06.OPTT Operability Period Test for the TKO-LTT TCSS																								
NE/2017/06.DLPT DLP for the TKO-LTT TCSS																								
NE/2017/06.DOC1 Documentation Submission for TKO-LTT TCSS																								
DWP10790	Operation Manual	5	5	0%	30-Dec-21	03-Jan-22	-74																	
DWP10810	Training Material	7	7	0%	30-Dec-21	05-Jan-22	-76																	
NE/2017/06.TRT Training for TKO-LTT TCSS																								
NE/2017/06.EMC Equipment Manufacturing and Delivery for CBL TCSS																								
NE/2017/06.CSC1 Construction Stage for CBL TCSS																								
NE/2017/06.CSC1.S2A2B Works for Section 2A and Section 2B																								
NE/2017/06.CSC1.S2A2B.5A Stage 5 Works (Within Portion 5A)																								
NE/2017/06.CSC1.S2A2B.5B Stage 5 Works (Within Portion 5B)																								
DWP6830	Handover of Holding-down Bolts for Pole Foundation to Civil	1	1	0%	04-Feb-22	05-Feb-22	692																	
NE/2017/06.CSC1.S2A2B.5B.1 Laying Cables (fibre, signal and power)																								
NE/2017/06.CSC1.S2A2B.5B.2 Installation of Traffic Control Field Equipment																								
NE/2017/06.CSC1.S2A2B.5B.3 Installation of CCTV																								
NE/2017/06.CSC1.S2A2B.5B.4 Installation of Detection System Equipment																								
NE/2017/06.CSC1.S2A2B.5B.8 Installation of Enforcement Equipment																								
NE/2017/06.CSC1.S2A2B.5B.7 Installation of Control Cabinet																								
NE/2017/06.CSC1.S2A2B.5B.5 Local Cables Installation, Testing and Termination																								
NE/2017/06.CSC1.S2A2B.5B.6 Site Commissioning Test of TCD and Fibre Cable																								
NE/2017/06.CSC1.S2A2B.5C Stage 5 Works (Within Portion 5C)																								
NE/2017/06.SATC SAT for CBL TCSS																								
NE/2017/06.OPTC Operability Period Test For the CBL TCSS																								
NE/2017/06.DLPC DLP for the CBL TCSS																								
NE/2017/06.DOC Documentation Submission for CBL TCSS																								
NE/2017/06.TRC Training for CBL TCSS																								

Activity ID	Activity Name	Original Duration	Start	Finish	2021		2022			
					Dec	Jan	Feb	Mar	Apr	
Tseung Kwan O Interchange and Associated Works 202111-env		322	04-Mar-21 A	08-Apr-22						
Construction Work		322	04-Mar-21 A	08-Apr-22						
Bridge Parapet & Utility Trough		177	04-Mar-21 A	21-Jan-22						
CON-15371	Installation of Movement Joint for Bridge ML	21	04-Mar-21 A	10-Jan-22						
CON-15451	Installation of Movement Joint for Bridge S200	21	18-Aug-21 A	21-Jan-22						
CON-15411	Installation of Movement Joint for Bridge S300	21	02-Sep-21 A	14-Jan-22						
Bridge Furniture & Road Work		141	10-Jul-21 A	28-Jan-22						
CON-15560	Road Pavement and Road Marking for Bridge ML	58	10-Jul-21 A	14-Jan-22						
CON-15650	Road Pavement and Road Marking for Bridge S100	49	29-Oct-21 A	28-Jan-22						
CON-15590	Road Pavement and Road Marking for Bridge S300	43	05-Nov-21 A	21-Jan-22						
CON-15620	Road Pavement and Road Marking for Bridge S200	43	05-Nov-21 A	21-Jan-22						
Outstanding Works		72	28-Dec-21 A	08-Apr-22						
CON-16090	Outstanding Works period	72	28-Dec-21 A	08-Apr-22						

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works

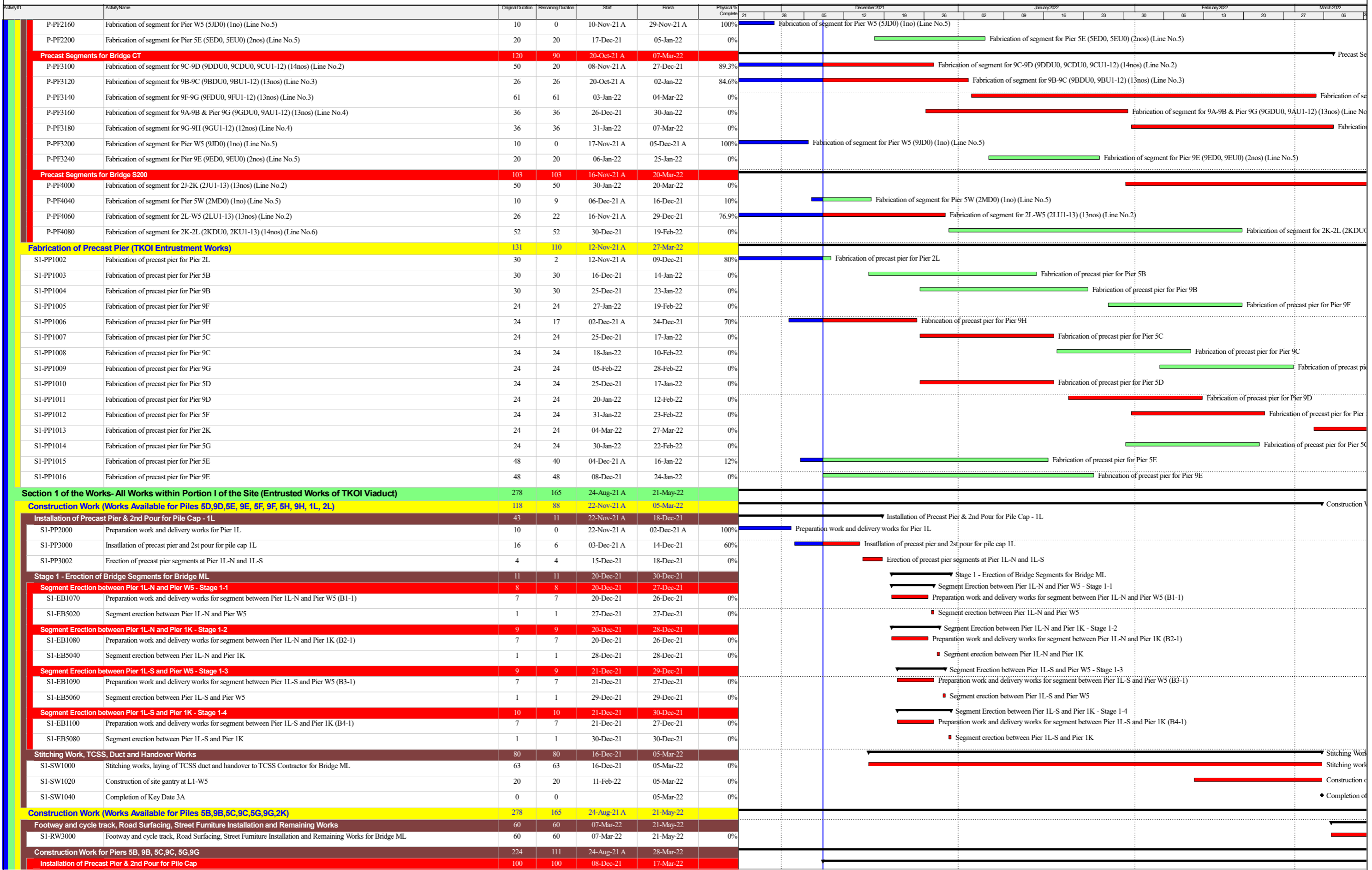
Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete	Timeline															
							December 2021				January 2022				February 2022							
							21	28	05	12	19	26	02	09	16	23	30	06	13	20	27	03
Cross Bay Link, Tseng Kwan O Main Bridge and Associated Works																						
Planned Key Dates and Section of the Works																						
Planned Key Dates																						
KDS1070	Key Date 3A-Completion of all Works in Bridge ML within Portion I of the Site necessary for installation and T&C of TCSS	0	0	05-Mar-22	05-Mar-22	0%																
Access Date																						
PAD1110	Access to Portion VI	0	0	08-Dec-21*	08-Dec-21	0%																
Contractual Key Dates and Section of the Works																						
Revised Contractual Key Dates and Section of the Works																						
Revised Key Dates																						
KDS2280	Key Date 3A-Completion of all Works in Bridge ML within Portion I of the Site necessary for installation and T&C of TCSS	0	0	12-Feb-22	28-Feb-22*	0%																
KDS2400	Key Date 4C- Completion of all Works in Bridges within Portion II,III,IV and VI of the Site for opening of CBL	0	0	12-Feb-22	12-Feb-22*	0%																
Revised Section of the Works																						
KDS2220	Section 2 of the Works-All Works within Portion II,III,IV and VI of the Site	0	0	12-Feb-22	12-Feb-22*	0%																
KDS2250	Section 5 of the Works-All Works within Portion V	0	0	12-Feb-22	12-Feb-22*	0%																
Original Contractual Key Dates and Section of the Works																						
Original Contractual Key Dates																						
KDS1260	Key Date 3-Completion of all Works in Bridges within Portion I of the Site necessary for installation and T&C of TCSS	0	0	12-Jan-22	12-Jan-22*	0%																
KDS1280	Key Date 4- Completion of all Works in Bridges within Portion II,III,IV, V and VI of the Site for opening of CBL	0	0	12-Jan-22	12-Feb-22*	0%																
Original Contractual Section of the Works																						
KDS1300	Section 1 of the Works-All Works within Portion I of the Site	0	0	12-Feb-22	12-Feb-22*	0%																
KDS1320	Section 2 of the Works-All Works within Portion II,III,IV and VI of the Site	0	0	12-Feb-22	12-Feb-22*	0%																
KDS1340	Section 3 of the Works-All of the Landscape Softworks	0	0	12-Feb-22	12-Feb-22*	0%																
KDS1360	Section 5 of the Works-All Works within Portion V	0	0	12-Feb-22	12-Feb-22*	0%																
Preliminaries, Contractor's Design & Method Statement Submission & Approval																						
Contractor's Design Submission and Approval																						
CDS1230	Design of cycle rack (incl. 14 days TRA)	111	50	12-Jun-21 A	26-Jan-22	65%																
Precasting & Fabrication Works																						
Fabrication of Precast Segments (TKOI Entrustment Works)																						
Pre-stressing Works																						
Pre-stressing Works for Bridge ML																						
P-PF5000	Linking and stressing for 1L-N - W5 (Linking yard No.2)	41	11	30-Nov-21 A	18-Dec-21	100%																
P-PF5020	Linking and stressing for 1K-N - 1L-N (Linking yard No.2)	6	6	10-Dec-21	15-Dec-21	0%																
P-PF5040	Linking and stressing for 1L-S - W5 (Linking yard No.1)	21	5	07-Dec-21 A	12-Dec-21	20%																
P-PF5060	Linking and stressing for 1K-S - 1L-S (Linking yard No.1)	6	6	13-Dec-21	18-Dec-21	0%																
Pre-stressing Works for Bridge S400																						
P-PF6000	Linking and stressing for 5B-5C (Linking yard No.1)	15	15	21-Jan-22	04-Feb-22	0%																
P-PF6020	Linking and stressing for 5E-5F (Linking yard No.1)	15	15	20-Feb-22	06-Mar-22	0%																
P-PF6040	Linking and stressing for 5H-W5 (Linking yard No.2)	15	15	16-Dec-21	30-Dec-21	0%																
P-PF6060	Linking and stressing for 5A-5B (Linking yard No.2)	15	15	15-Jan-22	29-Jan-22	0%																
P-PF6080	Linking and stressing for 5F-5G (Linking yard No.2)	15	15	14-Feb-22	28-Feb-22	0%																
P-PF6100	Linking and stressing for 5C-5D (Linking yard No.3)	15	15	05-Jan-22	19-Jan-22	0%																
P-PF6120	Linking and stressing for 5D-5E (Linking yard No.3)	15	15	04-Feb-22	18-Feb-22	0%																
P-PF6140	Linking and stressing for 5G-5H (Linking yard No.3)	15	15	06-Mar-22	20-Mar-22	0%																
Pre-stressing Works for Bridge CT																						
P-PF7000	Linking and stressing for 9A-9B (Linking yard No.1)	15	15	05-Feb-22	19-Feb-22	0%																
P-PF7020	Linking and stressing for 9F-9G (Linking yard No.1)	15	15	07-Mar-22	21-Mar-22	0%																
P-PF7040	Linking and stressing for 9C-9D (Linking yard No.2)	15	15	31-Dec-21	14-Jan-22	0%																
P-PF7060	Linking and stressing for 9D-9E (Linking yard No.2)	15	15	30-Jan-22	13-Feb-22	0%																
P-PF7080	Linking and stressing for 9G-9H (Linking yard No.2)	15	15	08-Mar-22	22-Mar-22	0%																
P-PF7100	Linking and stressing for 9H-W5 (Linking yard No.3)	15	15	21-Dec-21	04-Jan-22	0%																
P-PF7120	Linking and stressing for 9B-9C (Linking yard No.3)	15	15	20-Jan-22	03-Feb-22	0%																
P-PF7140	Linking and stressing for 9E-9F (Linking yard No.3)	15	15	19-Feb-22	05-Mar-22	0%																
Pre-stressing Works for Bridge S200																						
P-PF8000	Linking and stressing for 2L-W5 (Linking yard No.1)	15	15	06-Jan-22	20-Jan-22	0%																
Fabrication Works																						
Precast Segments for Bridge S400																						
P-PF2080	Fabrication of segment for 5A-5B (SAU1-12) (12nos) (Line No.1)	88	58	27-Oct-21 A	03-Feb-22	66.7%																
P-PF2100	Fabrication of segment for 5G - 5H (SGDU0, 5GU1-13) (14nos) (Line No.1)	48	48	18-Dec-21	03-Feb-22	0%																
P-PF2120	Fabrication of segment for 5F - 5G (5FDU0, 5FU1-13) (14nos) (Line No.2)	38	38	23-Dec-21	29-Jan-22	0%																
P-PF2140	Fabrication of segment for 5B-5C (5BDU0, 5BU1-13) (14nos) (Line No.4)	45	18	27-Oct-21 A	25-Dec-21	75%																

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ⇨ Summary

Three Month Rolling Programme (December 2021 - March 2022)

Date	Revision	Checked	Approved
08-Dec-21	3MRP (Dec 21 - Mar 22)		

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O - Main Bridge and Associated Works



■ Remaining Level of Effort ■ Critical Remaining Work
■ Actual Work ◆ Milestone
■ Remaining Work ▼ Summary

Three Month Rolling Programme (December 2021 - March 2022)

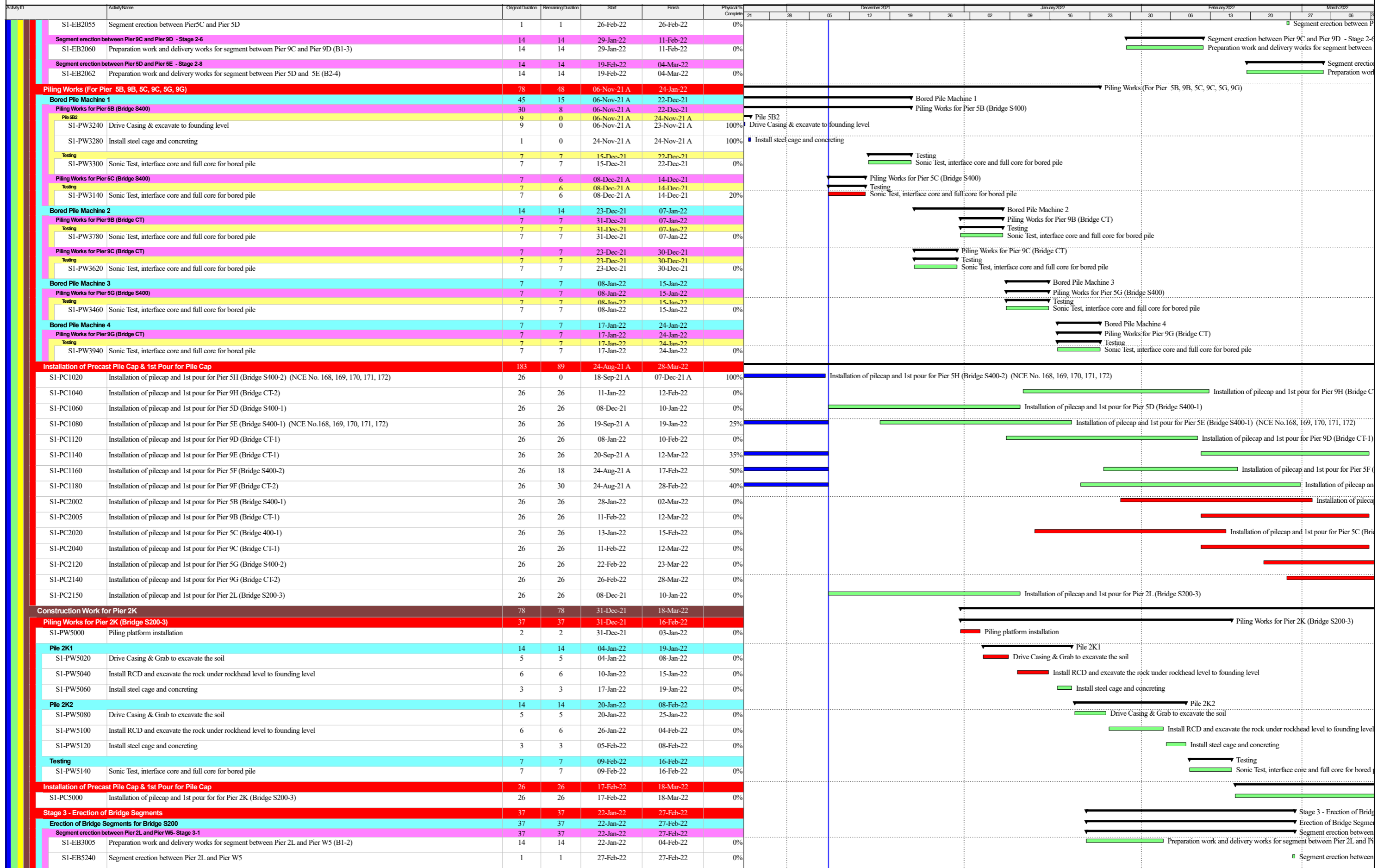
Date	Revision	Checked	Approved
08-Dec-21	3MRP (Dec21 - Mar22)		

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete	Timeline											
							21	28	05	12	19	26	02	09	16	23	30	06
Installation of Precast Pier & 2nd Pour for Pile Cap - 2L							Installation of Precast Pier & 2nd Pour for Pile Cap - 2L											
S1-PP2040	Preparation work and delivery works for Pier 2L	10	10	10-Dec-21	19-Dec-21	0%	Preparation work and delivery works for Pier 2L											
S1-PP3010	Installation of precast pier and 2st pour for pile cap 2L	10	10	11-Jan-22	21-Jan-22	0%	Installation of precast pier and 2st pour for pile cap 2L											
Installation of Precast Pier & 2nd Pour for Pile Cap - 5B							Installation of Precast Pier & 2nd Pour for Pile Cap - 5B											
S1-PP2060	Preparation work and delivery works for Pier 5B	10	10	15-Jan-22	24-Jan-22	0%	Preparation work and delivery works for Pier 5B											
S1-PP3040	Installation of precast pier and 2st pour for pile cap 5B	10	10	03-Mar-22	14-Mar-22	0%	Installation of precast pier and 2st pour for pile cap 5B											
Installation of Precast Pier & 2nd Pour for Pile Cap - 9B							Installation of Precast Pier & 2nd Pour for Pile Cap - 9B											
S1-PP2080	Preparation work and delivery works for Pier 9B	10	10	24-Jan-22	02-Feb-22	0%	Preparation work and delivery works for Pier 9B											
Installation of Precast Pier & 2nd Pour for Pile Cap - 5C							Installation of Precast Pier & 2nd Pour for Pile Cap - 5C											
S1-PP2140	Preparation work and delivery works for Pier 5C	10	10	18-Jan-22	27-Jan-22	0%	Preparation work and delivery works for Pier 5C											
S1-PP3120	Installation of precast pier and 2st pour for pile cap 5C	7	7	16-Feb-22	23-Feb-22	0%	Installation of precast pier and 2st pour for pile cap 5C											
Installation of Precast Pier & 2nd Pour for Pile Cap - 9C							Installation of Precast Pier & 2nd Pour for Pile Cap - 9C											
S1-PP2160	Preparation work and delivery works for Pier 9C	10	10	11-Feb-22	20-Feb-22	0%	Preparation work and delivery works for Pier 9C											
Installation of Precast Pier & 2nd Pour for Pile Cap - 9G							Installation of Precast Pier & 2nd Pour for Pile Cap - 9G											
S1-PP2180	Preparation work and delivery works for Pier 9G	10	10	01-Mar-22	10-Mar-22	0%	Preparation work and delivery works for Pier 9G											
Installation of Precast Pier & 2nd Pour for Pile Cap - 5G							Installation of Precast Pier & 2nd Pour for Pile Cap - 5G											
S1-PP2260	Preparation work and delivery works for Pier 5G	10	10	23-Feb-22	04-Mar-22	0%	Preparation work and delivery works for Pier 5G											
Installation of Precast Pier & 2nd Pour for Pile Cap - 5H							Installation of Precast Pier & 2nd Pour for Pile Cap - 5H											
S1-PP2020	Preparation work and delivery works for Pier 5H	10	10	08-Dec-21	17-Dec-21	0%	Preparation work and delivery works for Pier 5H											
S1-PP3020	Installation of precast pier and 2st pour for pile cap 5H	10	10	18-Dec-21	31-Dec-21	0%	Installation of precast pier and 2st pour for pile cap 5H											
Installation of Precast Pier & 2nd Pour for Pile Cap - 9H							Installation of Precast Pier & 2nd Pour for Pile Cap - 9H											
S1-PP2120	Preparation work and delivery works for Pier 9H	10	10	25-Dec-21	03-Jan-22	0%	Preparation work and delivery works for Pier 9H											
S1-PP3100	Installation of precast pier and 2st pour for pile cap 9H	10	10	14-Feb-22	24-Feb-22	0%	Installation of precast pier and 2st pour for pile cap 9H											
Installation of Precast Pier & 2nd Pour for Pile Cap - 5D							Installation of Precast Pier & 2nd Pour for Pile Cap - 5D											
S1-PP2200	Preparation work and delivery works for Pier 5D	9	9	18-Jan-22	26-Jan-22	0%	Preparation work and delivery works for Pier 5D											
S1-PP3180	Installation of precast pier and 2st pour for pile cap 5D	9	9	27-Jan-22	09-Feb-22	0%	Installation of precast pier and 2st pour for pile cap 5D											
Installation of Precast Pier & 2nd Pour for Pile Cap - 5E							Installation of Precast Pier & 2nd Pour for Pile Cap - 5E											
S1-PP2280	Preparation work and delivery works for Pier 5E	10	10	17-Jan-22	26-Jan-22	0%	Preparation work and delivery works for Pier 5E											
S1-PP3260	Installation of precast pier and 2st pour for pile cap 5E	10	10	27-Jan-22	10-Feb-22	0%	Installation of precast pier and 2st pour for pile cap 5E											
Installation of Precast Pier & 2nd Pour for Pile Cap - 9D							Installation of Precast Pier & 2nd Pour for Pile Cap - 9D											
S1-PP2220	Preparation work and delivery works for Pier 9D	10	10	13-Feb-22	22-Feb-22	0%	Preparation work and delivery works for Pier 9D											
S1-PP3200	Installation of precast pier and 2st pour for pile cap 9D	10	10	23-Feb-22	05-Mar-22	0%	Installation of precast pier and 2st pour for pile cap 9D											
Installation of Precast Pier & 2nd Pour for Pile Cap - 9E							Installation of Precast Pier & 2nd Pour for Pile Cap - 9E											
S1-PP2300	Preparation work and delivery works for Pier 9E	10	10	25-Jan-22	03-Feb-22	0%	Preparation work and delivery works for Pier 9E											
Installation of Precast Pier & 2nd Pour for Pile Cap - 5F							Installation of Precast Pier & 2nd Pour for Pile Cap - 5F											
S1-PP2240	Preparation work and delivery works for Pier 5F	10	10	24-Feb-22	05-Mar-22	0%	Preparation work and delivery works for Pier 5F											
S1-PP3220	Installation of precast pier and 2st pour for pile cap 5F	10	10	07-Mar-22	17-Mar-22	0%	Installation of precast pier and 2st pour for pile cap 5F											
Installation of Precast Pier & 2nd Pour for Pile Cap - 9F							Installation of Precast Pier & 2nd Pour for Pile Cap - 9F											
S1-PP2100	Preparation work and delivery works for Pier 9F	10	10	20-Feb-22	01-Mar-22	0%	Preparation work and delivery works for Pier 9F											
S1-PP3080	Installation of precast pier and 2st pour for pile cap 9F	10	10	02-Mar-22	12-Mar-22	0%	Installation of precast pier and 2st pour for pile cap 9F											
Stage 2 - Erection of Bridge Segments							Stage 2 - Erection of Bridge Segments											
Erection of Bridge Segments for Bridge S400 and Bridge CT							Erection of Bridge Segments for Bridge S400 and Bridge CT											
Segment erection between Pier 5H and Pier W5 - Stage 2-1							Segment erection between Pier 5H and Pier W5 - Stage 2-1											
S1-EB2002	Preparation work and delivery works for segment between Pier 5H and W5 (B2-2)	14	14	31-Dec-21	13-Jan-22	0%	Preparation work and delivery works for segment between Pier 5H and W5 (B2-2)											
S1-EB2004	Segment erection between Pier 5H and Pier W5	1	1	14-Jan-22	14-Jan-22	0%	Segment erection between Pier 5H and Pier W5											
Segment erection between Pier 9D and Pier 9E - Stage 2-11							Segment erection between Pier 9D and Pier 9E - Stage 2-11											
S1-EB2064	Preparation work and delivery works for segment between Pier 9D and Pier 9E (B3-4)	14	14	14-Feb-22	27-Feb-22	0%	Preparation work and delivery works for segment between Pier 9D and Pier 9E (B3-4)											
Segment erection between Pier 5E and Pier 5F - Stage 2-12							Segment erection between Pier 5E and Pier 5F - Stage 2-12											
S1-EB2066	Preparation work and delivery works for segment between Pier 5E and Pier 5F (B4-4)	14	14	07-Mar-22	20-Mar-22	0%	Preparation work and delivery works for segment between Pier 5E and Pier 5F (B4-4)											
Segment erection between Pier 9E and Pier 9F - Stage 2-13							Segment erection between Pier 9E and Pier 9F - Stage 2-13											
S1-EB2068	Preparation work and delivery works for segment between Pier 9E and Pier 9F (B1-5)	14	14	06-Mar-22	19-Mar-22	0%	Preparation work and delivery works for segment between Pier 9E and Pier 9F (B1-5)											
Segment erection between Pier 5F and Pier 5G - Stage 2-10							Segment erection between Pier 5F and Pier 5G - Stage 2-10											
S1-EB2070	Preparation work and delivery works for segment between Pier 5F and Pier 5G (B2-5)	14	14	01-Mar-22	14-Mar-22	0%	Preparation work and delivery works for segment between Pier 5F and Pier 5G (B2-5)											
Segment erection between Pier 9H and Pier W5 - Stage 2-2							Segment erection between Pier 9H and Pier W5 - Stage 2-2											
S1-EB2005	Preparation work and delivery works for segment between Pier 9H and W5 (B3-2)	14	14	05-Jan-22	18-Jan-22	0%	Preparation work and delivery works for segment between Pier 9H and W5 (B3-2)											
S1-EB2008	Segment erection between Pier 9H and Pier W5	1	1	25-Feb-22	25-Feb-22	0%	Segment erection between Pier 9H and Pier W5											
Segment erection between Abutment 5A and Pier 5B - Stage 2-5							Segment erection between Abutment 5A and Pier 5B - Stage 2-5											
S1-EB2010	Preparation work and delivery works for segment between Abutment 5A and Pier 5B (B4-3)	14	14	03-Feb-22	16-Feb-22	0%	Preparation work and delivery works for segment between Abutment 5A and Pier 5B (B4-3)											
Segment erection between Abutment 9A and Pier 9B - Stage 2-9							Segment erection between Abutment 9A and Pier 9B - Stage 2-9											
S1-EB2020	Preparation work and delivery works for segment between Abutment 9A and Pier 9B (B1-4)	14	14	20-Feb-22	05-Mar-22	0%	Preparation work and delivery works for segment between Abutment 9A and Pier 9B (B1-4)											
Segment erection between Pier 5B and Pier 5C - Stage 2-7							Segment erection between Pier 5B and Pier 5C - Stage 2-7											
S1-EB2030	Preparation work and delivery works for segment between Pier 5B and Pier 5C (B2-3)	14	14	05-Feb-22	18-Feb-22	0%	Preparation work and delivery works for segment between Pier 5B and Pier 5C (B2-3)											
Segment erection between Pier 9B and Pier 9C - Stage 2-4							Segment erection between Pier 9B and Pier 9C - Stage 2-4											
S1-EB2040	Preparation work and delivery works for segment between Pier 9B and pier 9C (B3-3)	14	14	04-Feb-22	17-Feb-22	0%	Preparation work and delivery works for segment between Pier 9B and pier 9C (B3-3)											
Segment erection between Pier 5C and Pier 5D - Stage 2-3							Segment erection between Pier 5C and Pier 5D - Stage 2-3											
S1-EB2050	Preparation work and delivery works for segment between Pier 5C and 5D (B4-2)	14	14	20-Jan-22	02-Feb-22	0%	Preparation work and delivery works for segment between Pier 5C and 5D (B4-2)											

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ⇨ Summary

Three Month Rolling Programme (December 2021 - March 2022)

Date	Revision	Checked	Approved
08-Dec-21	3MRP (Dec 21 - Mar 22)		



█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▬ Summary

Three Month Rolling Programme (December 2021 - March 2022)

Date	Revision	Checked	Approved
08-Dec-21	3MRP (Dec 21 - Mar 22)		

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete	Gantt Chart (Dec 2021 - Mar 2022)											
							21	28	05	12	19	26	02	09	16	23	30	06
S2-RW1130	Installation of steel plate for L3 parapet	50	21	02-Nov-21 A	04-Jan-22	75%	Installation of steel plate for L3 parapet											
S2-RW1140	Installation of isolation steel post	45	45	15-Dec-21	11-Feb-22	0%	Installation of isolation steel post											
S2-RW1160	Installation of L3 railing	60	60	11-Jan-22	24-Mar-22	0%	Installation of L3 railing											
Fabrication and Delivery Works																		
S2-CB5540	Fabrication and delivery of steel post and transom for L3 parapet	60	60	08-Dec-21*	22-Feb-22	0%	Fabrication and delivery of steel post											
S2-CB5560	Fabrication and delivery of steel works for isolation panel	60	40	12-Nov-21 A	26-Jan-22	0%	Fabrication and delivery of steel works for isolation panel											
S2-CB5580	Fabrication of PMMA panel	90	90	10-Jan-22*	03-May-22	0%	Fabrication of PMMA panel											
Welding & Painting Works																		
Preparation Works																		
Removal of the Temporary Stiffening Supports inside the Steel Box																		
S2-SB2020	Removal of the temporary stiffening supports inside the steel box	30	0	08-Nov-21 A	09-Dec-21 A	100%	Removal of the temporary stiffening supports inside the steel box											
Activation of the Pendulum Bearing																		
S2-SB1520	Activation of permanent bearing and removal of temporary jacks from the Pier W1 (after completion of transition section)	6	6	19-Jan-22	25-Jan-22	0%	Activation of permanent bearing and removal of temporary jacks from the Pier W1 (after completion of transition section)											
5% NDT (Eddy Current)																		
S2-SB1560	Arch ribs	45	10	06-Oct-21 A	18-Dec-21	80%	5% NDT (Eddy Current) Arch ribs											
Painting of the Ring Weld																		
S2-SB2030	Painting of the west side span ring weld (outside)	141	135	23-Nov-21 A	27-May-22	25%	Painting of the west side span ring weld (outside)											
S2-SB2040	Painting of the west side span ring weld (inside)	7	7	22-Dec-21	31-Dec-21	0%	Painting of the west side span ring weld (inside)											
S2-SB2050	Painting of the east side span ring weld (outside)	20	11	23-Nov-21 A	20-Dec-21	33%	Painting of the east side span ring weld (outside)											
S2-SB2060	Painting of the east side span ring weld (inside)	7	15	06-Dec-21 A	24-Dec-21	0%	Painting of the east side span ring weld (inside)											
S2-SB2080	Top coating of the steel deck	98	98	24-Jan-22	27-May-22	0%	Top coating of the steel deck											
Removal of the Temporary Supports at W1 & E1																		
S2-SB2220	Removal of the temporary supports at W1	10	10	03-Jan-22	13-Jan-22	0%	Removal of the temporary supports at W1											
S2-SB2240	Removal of the temporary supports at W2	1	1	13-Jan-22	13-Jan-22	0%	Removal of the temporary supports at W2											
S2-SB2260	Removal of the temporary supports at E1	10	10	28-Dec-21	08-Jan-22	0%	Removal of the temporary supports at E1											
S2-SB2280	Removal of the temporary supports at E2	1	1	18-Jan-22	18-Jan-22	0%	Removal of the temporary supports at E2											
Welding Works																		
Secondary Deck Facilities Welding																		
S2-SB2120	Secondary deck facilities welding	42	0	01-Nov-21 A	03-Dec-21 A	100%	Secondary deck facilities welding											
Repair of the Welding Joint Cracks at N19																		
S2-SB2180	Welding repair and re-coating	12	0	20-Nov-21 A	23-Nov-21 A	100%	Welding repair and re-coating											
S2-SB2200	Completion of Repair of the welding joint cracks at N19	0	0	23-Nov-21 A	23-Nov-21 A	100%	Completion of Repair of the welding joint cracks at N19											
Welding of the Joint between Main Span and the East Side Span																		
S2-SB1760	Welding of the in-fill of ring weld (incl. NDT)	60	0	25-Aug-21 A	25-Nov-21 A	100%	Welding of the in-fill of ring weld (incl. NDT)											
S2-SB1780	Completion of the joint of east side span	0	0	25-Nov-21 A	25-Nov-21 A	100%	Completion of the joint of east side span											
Construction of Steel-Concrete Transition Zone																		
Construction of the west side transition																		
S2-CT1030	Welding of the box out on steel deck (bottom)	36	0	20-Oct-21 A	30-Nov-21 A	100%	Welding of the box out on steel deck (bottom)											
S2-CT1040	Concreting of the transition section	15	10	29-Sep-21 A	18-Dec-21	81%	Concreting of the transition section											
S2-CT1060	Welding of the box out on steel deck (top)	10	10	20-Dec-21	03-Jan-22	0%	Welding of the box out on steel deck (top)											
S2-CT1080	Stressing of the PT bar and tendons	7	7	04-Jan-22	11-Jan-22	0%	Stressing of the PT bar and tendons											
S2-CT1100	Removal of the temporary jacks from the Pier W2	1	1	12-Jan-22	12-Jan-22	0%	Removal of the temporary jacks from the Pier W2											
Construction of the east side transition																		
S2-CT1150	Welding of the box out on steel deck (bottom)	36	0	02-Nov-21 A	02-Dec-21 A	100%	Welding of the box out on steel deck (bottom)											
S2-CT1160	Concreting of the transition section	15	14	02-Nov-21 A	23-Dec-21	30%	Concreting of the transition section											
S2-CT1180	Welding of the box out on steel deck (top)	10	10	24-Dec-21	07-Jan-22	0%	Welding of the box out on steel deck (top)											
S2-CT1200	Stressing of the PT bar and tendons	7	7	08-Jan-22	15-Jan-22	0%	Stressing of the PT bar and tendons											
S2-CT1220	Removal of the temporary jacks from the Pier E2	1	1	17-Jan-22	17-Jan-22	0%	Removal of the temporary jacks from the Pier E2											
Associated, E&M Works for CBL Main Bridge and Marine Viaduct																		
UBG and AIC																		
UBG of the main span																		
S2-EM1000	Assembly of the working platform	46	18	27-Nov-21 A	22-Jan-22	100%	Assembly of the working platform											
S2-EM1020	Installation of the remaining rails	12	10	03-Dec-21 A	13-Jan-22	35%	Installation of the remaining rails											
S2-EM1040	Replacement of the cables and cable tray	7	7	03-Jan-22	10-Jan-22	0%	Replacement of the cables and cable tray											
S2-EM1060	Installation of the control system	3	3	11-Jan-22	13-Jan-22	0%	Installation of the control system											
S2-EM1080	Installation of the earthing	6	6	14-Jan-22	20-Jan-22	0%	Installation of the earthing											
S2-EM1100	Removal of the working platform	2	2	21-Jan-22	22-Jan-22	0%	Removal of the working platform											
UBG of the west side span																		
S2-EM1140	Installation of the remaining rails	3	0	19-Nov-21 A	25-Nov-21 A	100%	Installation of the remaining rails											
S2-EM1160	Installation of the control system	2	2	14-Jan-22	15-Jan-22	0%	Installation of the control system											
S2-EM1180	Installation of the earthing	2	2	17-Jan-22	18-Jan-22	0%	Installation of the earthing											
UBG of the east side span																		
							UBG of the east side span											

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ⇨ Summary

Three Month Rolling Programme (December 2021 - March 2022)

Date	Revision	Checked	Approved
08-Dec-21	3MRP (Dec 21 - Mar 22)		

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Physical % Complete	Timeline																
							December 2021				January 2022				February 2022								
S2-EM1240	Installation of the control system	2	2	19-Jan-22	20-Jan-22	0%																	
S2-EM1260	Installation of the earthing	2	2	21-Jan-22	22-Jan-22	0%																	
Installation of Other Systems		118	100	30-Aug-21 A	25-May-22																		
S2-EM1360	SHMS installation	60	25	30-Aug-21 A	19-Feb-22	25%																	
S2-EM1380	Dehumidification system installaion in the stay cables	10	10	19-Jan-22	29-Jan-22	0%																	
S2-EM1400	Commission and testing of the dehumidification system	90	90	31-Jan-22	25-May-22	0%																	
Section 3 of the Works-Comprises All of the Landscape Works		100	100	17-Feb-22	21-Jun-22																		
S3-LW2000	Landscape works for CBL bridge	100	100	17-Feb-22	21-Jun-22	0%																	
Section 5 of the Works-All Works within Portion V (CBL E&M Plantroom)		474	127	30-Jul-20 A	18-May-22																		
Remaining Work		410	127	30-Jul-20 A	18-May-22																		
S5-PR2200	Water works,pluming and drainage works	60	9	30-Jul-20 A	17-Dec-21	92%																	
S5-PR2285	Installation of SCADA and connect to dehumidification system	63	63	08-Dec-21	25-Feb-22	0%																	
S5-PR2290	Cable Installation Work After Access Permitted (Portion VI)	63	63	28-Feb-22	18-May-22	0%																	
Major Services System		425	78	28-Sep-20 A	15-Mar-22																		
Electrical System		303	78	02-Oct-20 A	15-Mar-22																		
Generator Room		303	78	02-Oct-20 A	15-Mar-22																		
S5-PR2500	Generator Installation (Including E&M Work)	90	45	02-Oct-20 A	04-Feb-22	85%																	
S5-PR2540	Generator SAT	3	3	05-Feb-22	08-Feb-22	0%																	
S5-PR2545	Testing and Commisioning	30	30	09-Feb-22	15-Mar-22	0%																	
MVAC System		402	55	28-Sep-20 A	16-Feb-22																		
Installation of MVAC System		402	55	28-Sep-20 A	16-Feb-22																		
S5-PR2840	MVAC Installation Work	70	37	28-Sep-20 A	22-Jan-22	86%																	
S5-PR2900	MVAC Testing and Commisioning	18	18	24-Jan-22	16-Feb-22	0%																	
S5-PR2920	Accomplish of MVAC Installation	0	0		16-Feb-22	0%																	

█ Remaining Level of Effort █ Critical Remaining Work
█ Actual Work ◆ Milestone
█ Remaining Work ▼ Summary

Three Month Rolling Programme (December 2021 - March 2022)

Date	Revision	Checked	Approved
08-Dec-21	3MRP (Dec21 - Mar 22)		

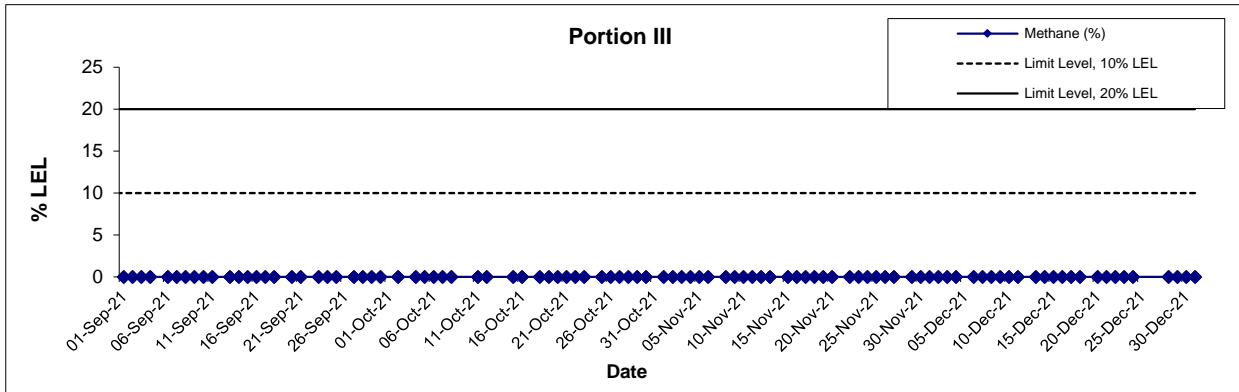
**APPENDIX R
RECORD OF LANDFILL GAS
MONITORING BY CONTRACTOR**

APPENDIX R - RECORD OF LANDFILL GAS MONITORING BY THE CONTRACTOR

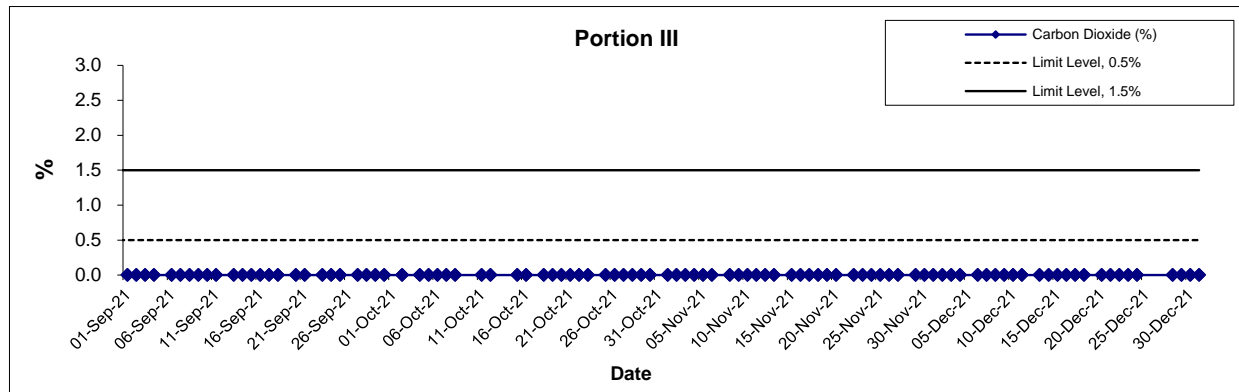
Location	Date of Measurement	Sampling time	Weather Condition	Temperature (°C)	Methane (%)	Carbon dioxide (%)	Oxygen (%)
Portion III	1-Dec-21	8:32	Sunny	15	0	0	20.9
Portion III	1-Dec-21	13:19	Sunny	20	0	0	20.9
Portion III	2-Dec-21	8:39	Sunny	15	0	0	20.9
Portion III	2-Dec-21	13:41	Sunny	20	0	0	20.9
Portion III	3-Dec-21	8:29	Sunny	15	0	0	20.9
Portion III	3-Dec-21	13:14	Sunny	21	0	0	20.9
Portion III	4-Dec-21	8:15	Sunny	15	0	0	20.9
Portion III	4-Dec-21	13:07	Sunny	21	0	0	20.9
Portion III	6-Dec-21	8:21	Sunny	16	0	0	20.9
Portion III	6-Dec-21	13:15	Sunny	22	0	0	20.9
Portion III	7-Dec-21	8:31	Cloudy	17	0	0	20.9
Portion III	7-Dec-21	13:43	Sunny	23	0	0	20.9
Portion III	8-Dec-21	8:24	Sunny	18	0	0	20.9
Portion III	8-Dec-21	13:41	Sunny	22	0	0	20.9
Portion III	9-Dec-21	8:27	Sunny	19	0	0	20.9
Portion III	9-Dec-21	13:13	Sunny	23	0	0	20.9
Portion III	10-Dec-21	8:19	Sunny	19	0	0	20.9
Portion III	10-Dec-21	13:24	Sunny	24	0	0	20.9
Portion III	11-Dec-21	8:24	Sunny	20	0.0	0	20.9
Portion III	11-Dec-21	13:37	Sunny	24	0.0	0	20.9
Portion III	13-Dec-21	8:19	Sunny	17	0	0	20.9
Portion III	13-Dec-21	13:23	Sunny	22	0	0	20.9
Portion III	14-Dec-21	8:27	Sunny	19	0	0	20.9
Portion III	14-Dec-21	13:16	Sunny	24	0	0	20.9
Portion III	15-Dec-21	8:18	Cloudy	20	0	0	20.9
Portion III	15-Dec-21	13:32	Cloudy	23	0	0	20.9
Portion III	16-Dec-21	8:19	Cloudy	22	0	0	20.9
Portion III	16-Dec-21	13:27	Sunny	26	0	0	20.9
Portion III	17-Dec-21	8:24	Cloudy	19	0	0	20.9
Portion III	17-Dec-21	13:41	Cloudy	24	0	0	20.9
Portion III	18-Dec-21	8:23	Cloudy	16	0	0	20.9
Portion III	18-Dec-21	13:17	Sunny	20	0	0	20.9
Portion III	20-Dec-21	8:33	Rainy	16	0	0	20.9
Portion III	20-Dec-21	13:41	Rainy	19	0	0	20.9
Portion III	21-Dec-21	8:24	Rainy	16	0	0	20.9
Portion III	21-Dec-21	13:16	Cloudy	19	0	0	20.9
Portion III	22-Dec-21	8:26	Cloudy	17	0	0	20.9
Portion III	22-Dec-21	13:15	Cloudy	22	0	0	20.9
Portion III	23-Dec-21	8:17	Cloudy	19	0	0	20.9
Portion III	23-Dec-21	13:33	Cloudy	22	0	0	20.9
Portion III	24-Dec-21	8:21	Cloudy	18	0	0	20.9
Portion III	24-Dec-21	13:40	Cloudy	22	0	0	20.9
Portion III	28-Dec-21	8:18	Cloudy	12	0	0	20.9
Portion III	28-Dec-21	13:14	Cloudy	17	0	0	20.9
Portion III	29-Dec-21	8:23	Sunny	17	0	0	20.9
Portion III	29-Dec-21	13:25	Sunny	21	0	0	20.9
Portion III	30-Dec-21	8:15	Sunny	16	0	0	20.9
Portion III	30-Dec-21	13:31	Sunny	21	0	0	20.9
Portion III	31-Dec-21	8:26	Cloudy	17	0	0	20.9
Portion III	31-Dec-21	13:32	Sunny	20	0	0	20.9

APPENDIX R - RECORD OF LANDFILL GAS MONITORING BY THE CONTRACTOR

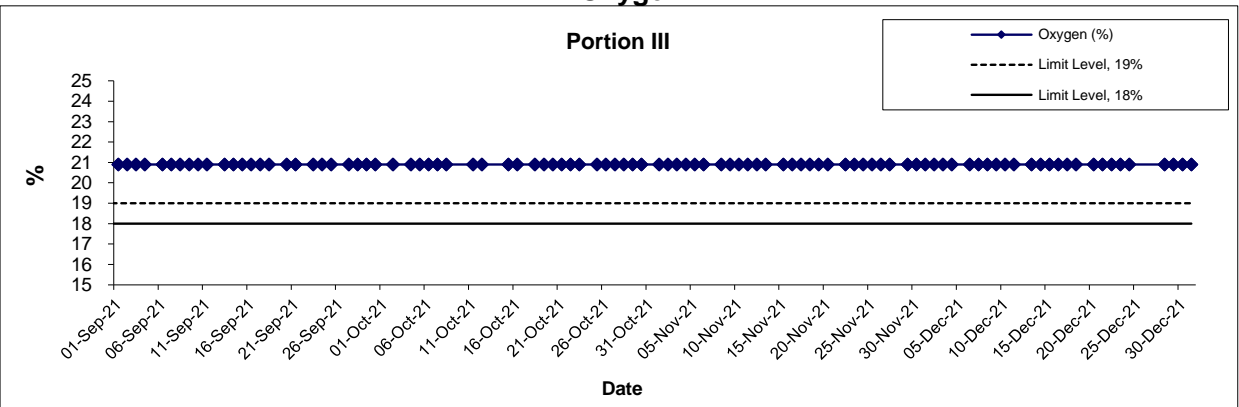
Methane



Carbon Dioxide



Oxygen



*No monitoring between 22-May-21 and 21-June-21 due to calibration of the gas detector

Agreement No. CE 59/2015 (EP) Environmental Team for Tseung Kwan O - Lam Tin Tunnel – Design and Construction	Scale	Project	
	Date	No. MA16034 Appendix R	
	N.T.S		
	Jan-22		

**APPENDIX T
PHOTO RECORD OF POST-
TRANSLOCATION CORAL
MONITORING SURVEY**

Appendix T – Cultural Heritage Monitoring Results

Date	Tilting				Settlement (mm)			Vibration (mm/s)		
	THT-TM-01	THT-TM-02	THT-TM-03	THT-TM-04	THT-BSP-1	THT-BSP-2	THT-BSP-3	Measurement Direction		
								Tran	Vertical	Longitude
1-Dec-21								0.575	0.481	0.347
2-Dec-21								0.244	0.717	0.370
3-Dec-21								0.323	0.166	0.307
4-Dec-21								0.158	0.244	0.134
6-Dec-21								0.315	0.339	0.252
7-Dec-21								0.213	0.268	0.276
8-Dec-21								0.110	0.221	0.126
9-Dec-21								0.110	0.158	0.166
10-Dec-21								0.922	0.213	0.969
11-Dec-21								0.244	0.378	0.229
13-Dec-21								0.095	0.158	0.189
14-Dec-21								0.244	0.504	0.434
15-Dec-21								0.095	0.158	0.142
16-Dec-21								0.102	0.150	0.134
17-Dec-21								0.102	0.173	0.134
18-Dec-21								0.394	0.331	0.489
20-Dec-21								0.292	0.465	0.284
21-Dec-21								0.244	0.331	0.284
22-Dec-21								0.307	0.252	0.339
23-Dec-21								0.386	0.560	0.646
24-Dec-21								0.126	0.158	0.110
28-Dec-21								0.229	0.221	0.252
29-Dec-21								0.221	0.118	0.150
30-Dec-21								0.276	0.213	0.158
31-Dec-21								0.134	0.236	0.189
Alert Level	1:2000				6			4.5		
Alarm Level	1:1500				8			4.8		
Action Level	1:1000				10			5		

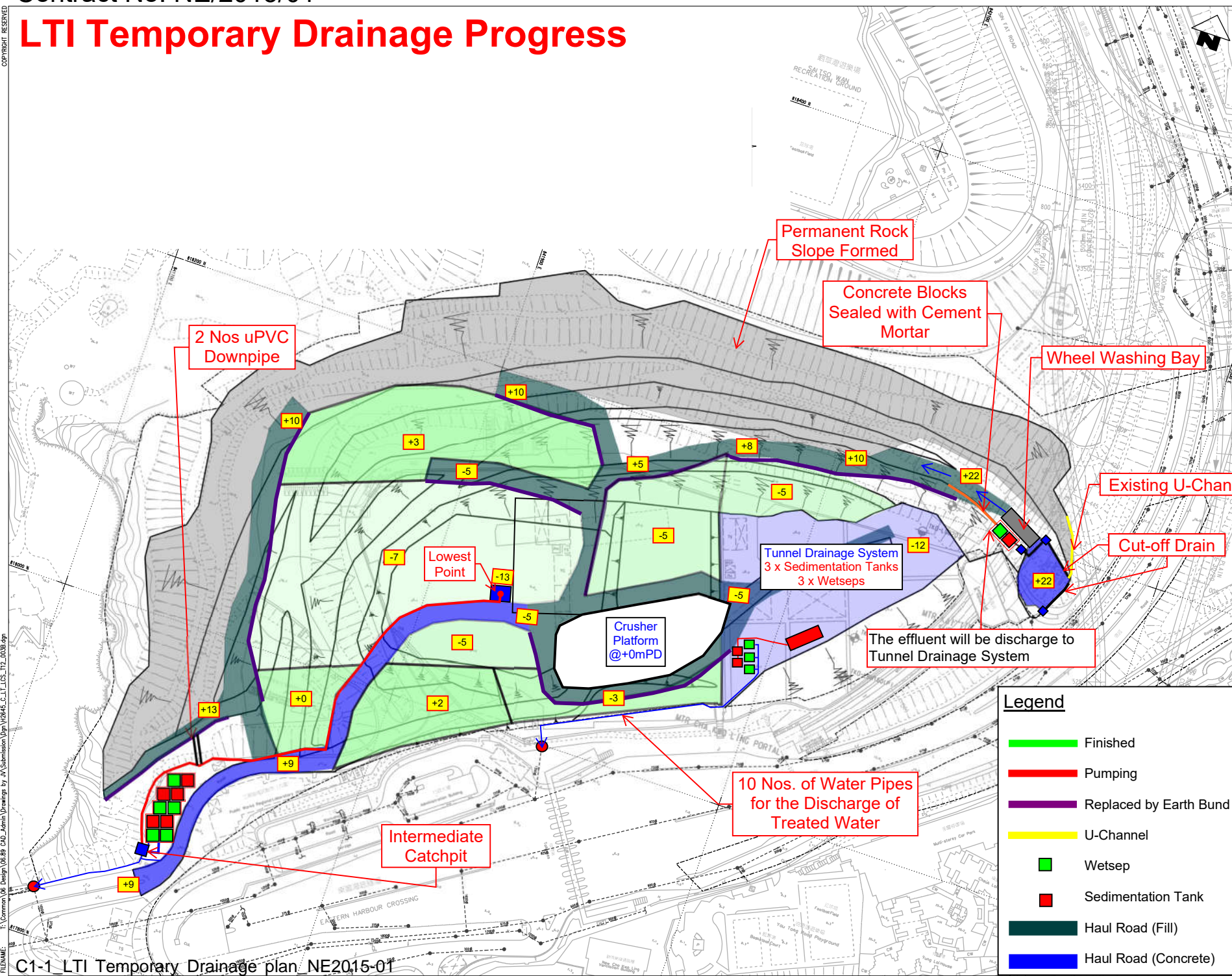
Obstructed by THT renovation work

Note:
Bold means Alert Level exceedance
Bold Italic means Alarm Level exceedance
Bold Italic with underline means Action Level exceedance

**APPENDIX V
SURFACE RUNOFF MANAGEMENT
PLAN**

LTI Temporary Drainage Progress

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- NOTES:**
1. ALL DIMENSIONS ARE LARGE 1000 MILLIMETRES UNLESS OTHERWISE SPECIFIED.
 2. 75mm THK. SHOTCRET SHALL BE APPLIED ON CHANNEL SURFACE.
 3. CHANNEL DIMENSION AS FOLLOW:
 4. REFER HAUL ROAD AND TEMPORARY CUT SLOPE DESIGN UNDER SEPARATE SUBMISSION.
 5. REFER TO DRAWING NO. H2645/T/CL/T/01/02/3 & 02/1 FOR PIPE CONNECTION DETAILS.

- LEGENDS:**
- 8450 Drainage Pipe
 - Water Treatment (100m³/HR)
 - Sump Pit
 - Site Boundary
 - 300x300 Proposed Temporary Drainage Channel
 - Existing Stormwater Drain
 - Existing U-Channel
 - Excavation / Haul Road Level
 - 6" Pump
 - Sedimentation Tank
 - UC Cut Off Drain

REV.	DESCRIPTION	DATE	BY	APP.
A	FIRST ISSUE	17/08/30	RA	JT

土木工程師 土木工程師
CEDD Civil Engineering and Development Department

AECOM
 TSEUNG KWAN O - LAM TIN TUNNEL - MAIN TUNNEL AND ASSOCIATED WORKS

LAM TIN
 TEMPORARY DRAINAGE DESIGN
 LAYOUT PLAN - STAGE 3

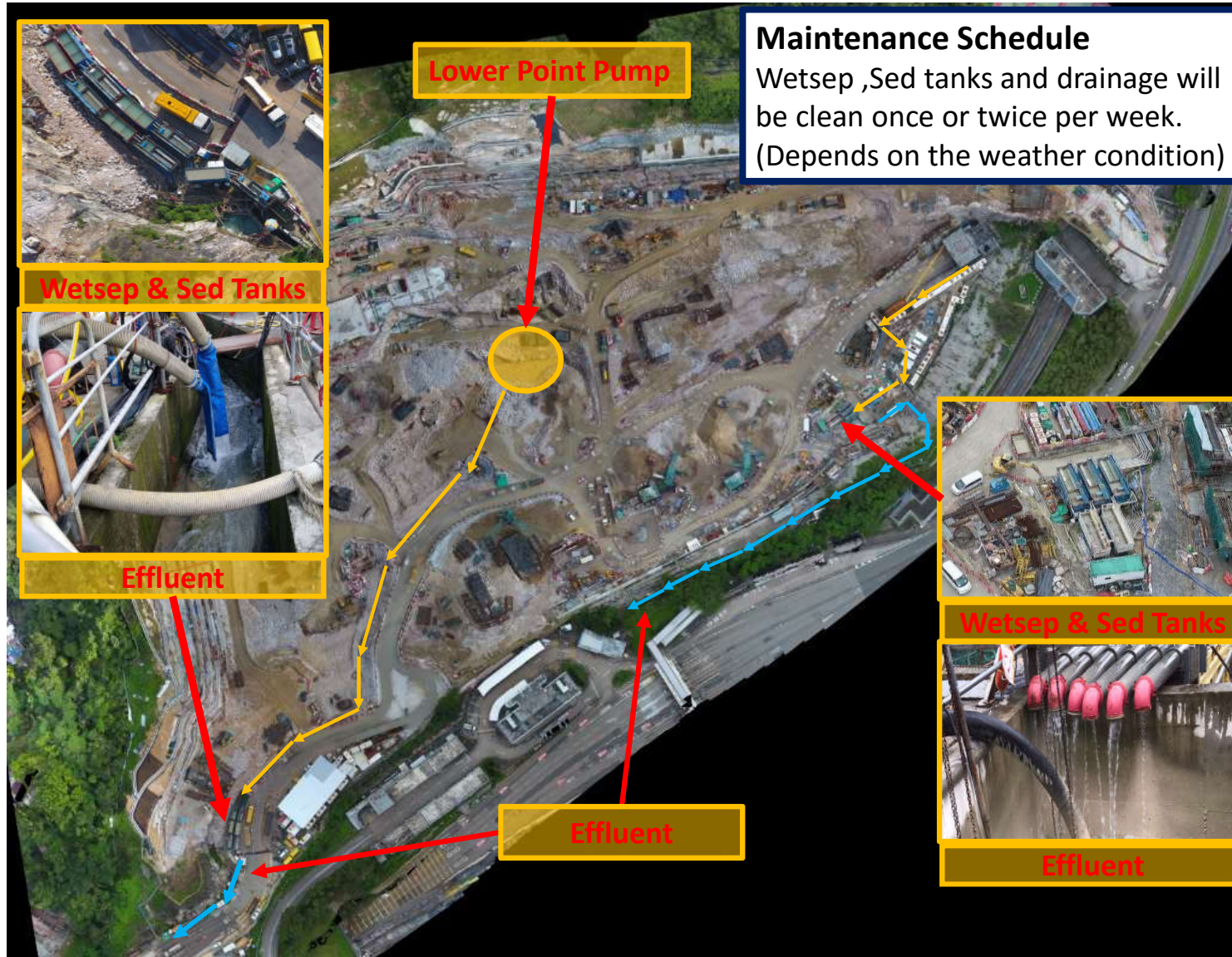
LEIGHTON 禮頓
 Leighton - China State Joint Ventures
 SUBCONTRACTOR / SUBCONSULTANT

DRG. NO. H2645/C/LT/CS/T/12/003	REV. A
CONTRACT NO. NE/2015/01	DATE OF ISSUE 2017-08-30
CHECKED BY RA	DRAWN BY CC
SCALE 1 : 1000	STATUS FOR INFORMATION
DIMENSIONS ARE IN MILLIMETRES	PAPER SIZE A1 1

Legend

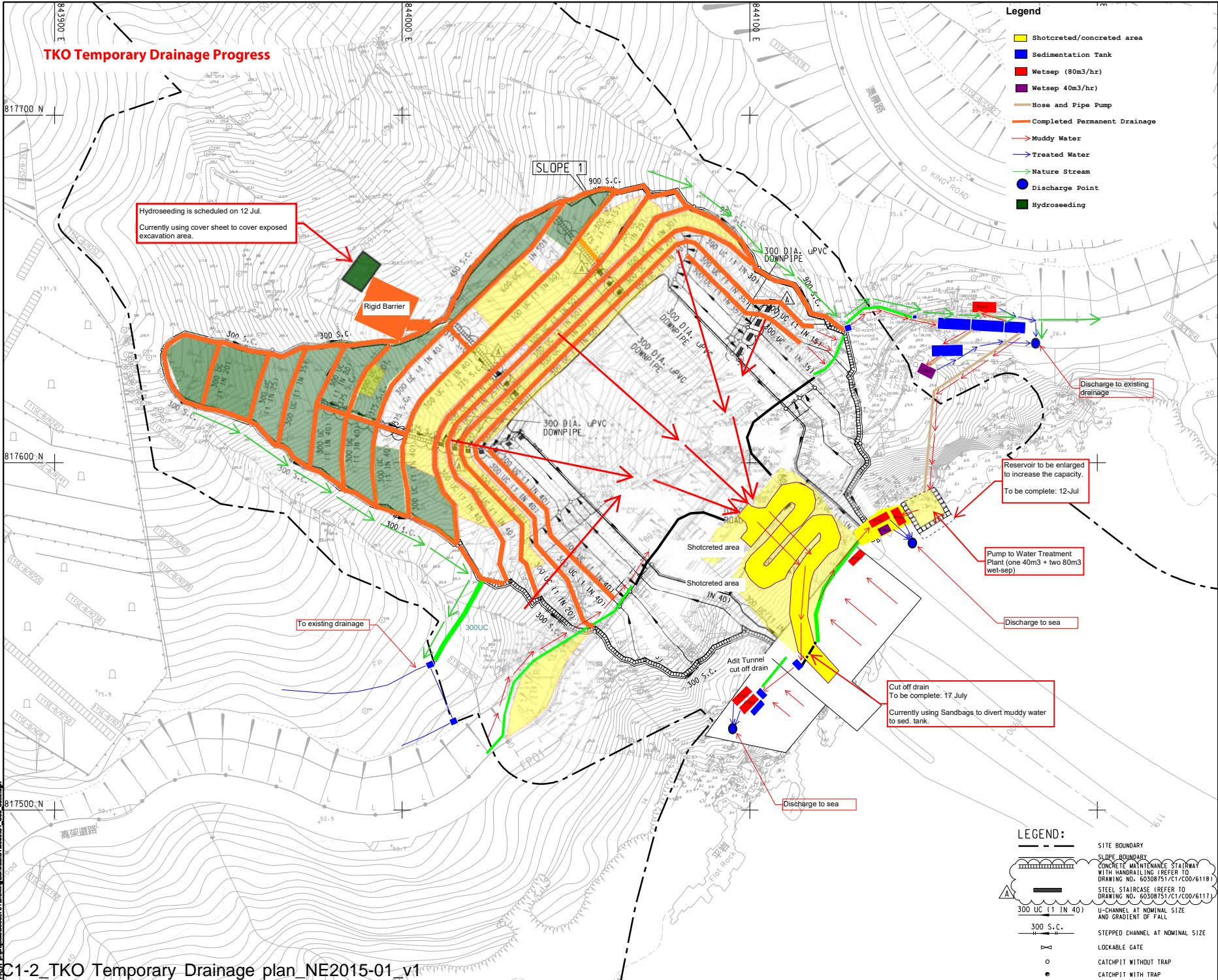
- Finished
- Pumping
- Replaced by Earth Bund
- U-Channel
- Wetsep
- Sedimentation Tank
- Haul Road (Fill)
- Haul Road (Concrete)

T:\Common\06 Design\06.02 CAD Admin\Plot.dwg PLOT COLOR - ATMS.ctb
 T:\Common\06 Design\06.02 CAD Admin\Drawings by A\Submission\Draw\H2645.dwg
 PLOT DATE: 2017/08/30
 PLOT TIME: 10:00:00 AM
 PLOT BY: JT



Project Management Initials: Designer: BMS Checked: CHC Approved: CHN
 ISO 91:84mm x 64mm
 Only

Plot File by: WJ/PC
 DWG No.: 60308751/C1/COO/6092/B
 Drawing Code: 150001C1 COO_6092/B



- Legend**
- Shotcreted/concreted area
 - Sedimentation Tank
 - Wetsep (80m³/hr)
 - Wetsep 40m³/hr
 - Hose and Pipe Pump
 - Completed Permanent Drainage
 - Muddy Water
 - Treated Water
 - Nature Stream
 - Discharge Point
 - Hydroseeding

AECOM

PROJECT
TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT TITLE
TSEUNG KWAN O - LAM TIN TUNNEL MAIN TUNNEL AND ASSOCIATED WORKS

CLIENT
 土木工程拓展署
CEDD
 Civil Engineering and Development Department

CONSULTANT
 AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS

FOR CONSTRUCTION

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK'D BY
B	JUL 16	WORKING DRAWING	ALC
A	OCT 15	TENDER ADDENDUM NO.1	CYKC
-	AUG 15	TENDER DRAWING	CYKC

STATUS
WORKING DRAWING

SCALE
 1:500

KEY PLAN

PROJECT NO. 60308751
CONTRACT NO. NE/2015/01

SHEET TITLE
TSEUNG KWAN O PORTAL SITE FORMATION DRAINAGE LAYOUT PLAN

SHEET NUMBER
 3

- LEGEND:**
- SITE BOUNDARY
 - SLOPE BOUNDARY
 - CONCRETE MAINTENANCE STAIRWAY WITH HANDRAILING (REFER TO DRAWING NO. 60308751/C1/COO/6118)
 - STEEL STAIRCASE (REFER TO DRAWING NO. 60308751/C1/COO/6117)
 - U-CHANNEL AT NOMINAL SIZE AND GRADIENT OF FALL
 - STEPPED CHANNEL AT NOMINAL SIZE
 - LOCKABLE GATE
 - CATCHPIT WITHOUT TRAP
 - CATCHPIT WITH TRAP

Maintenance Schedule
Wetsep ,Sed tanks and drainage will be clean once or twice per week.
(Depends on the weather condition)

Sed tanks

Site Clearance & provide cover to exposed excavation area

Wetsep

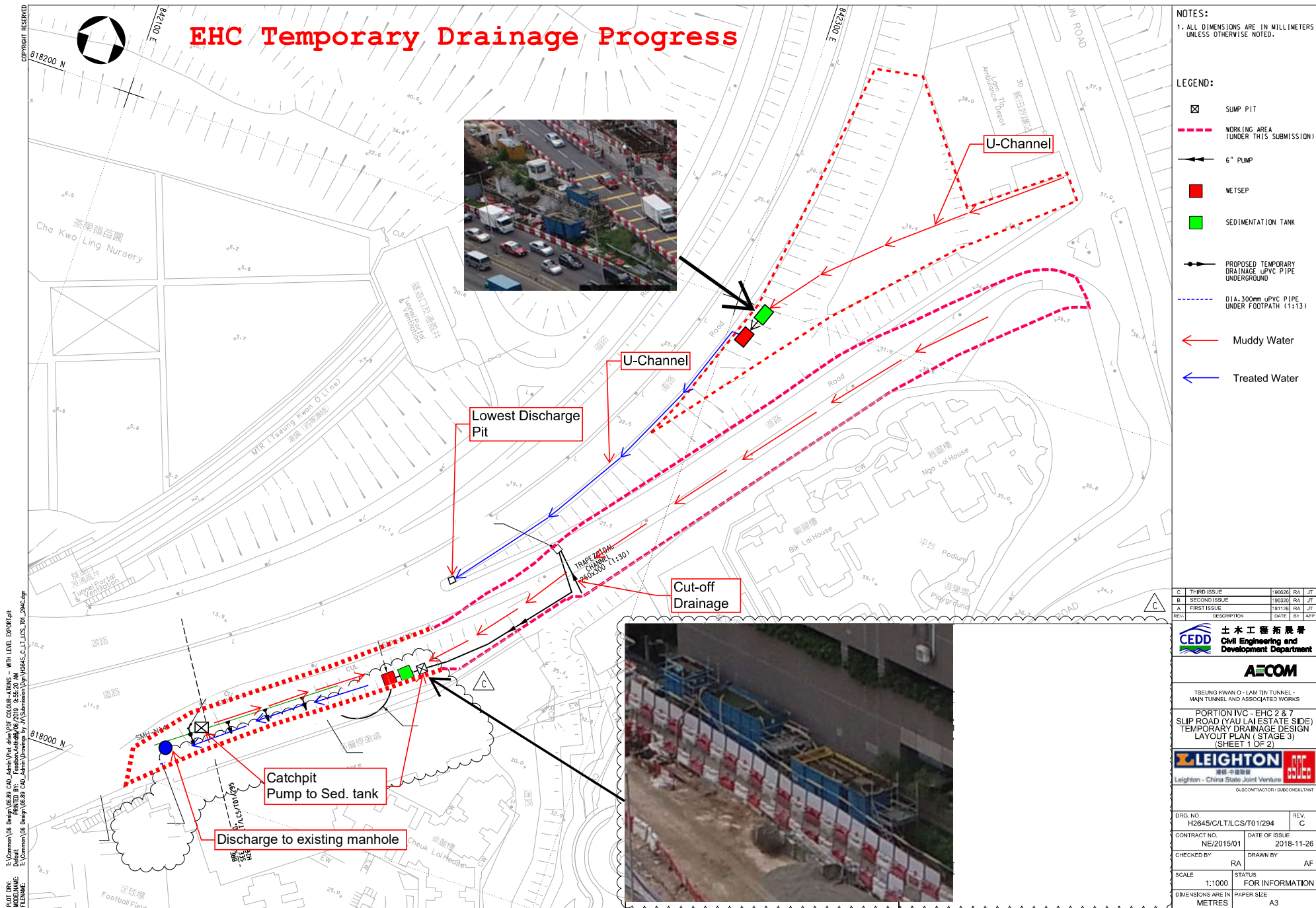
Effluent

Extension of Sed tanks

Contract Number NE/2015/01

2019年6月28日
新界

The image is an aerial photograph of a construction site for a road or bridge project. The site is situated on a hillside with terraced slopes. A large concrete structure, likely a bridge or viaduct, is under construction. Several callout boxes with yellow borders and red text are overlaid on the image, pointing to specific areas. A blue box at the top right contains the 'Maintenance Schedule' text. A yellow box labeled 'Sed tanks' points to a large concrete structure. A yellow box labeled 'Site Clearance & provide cover to exposed excavation area' points to a worker in a yellow vest. A yellow box labeled 'Wetsep' points to a blue truck. A yellow box labeled 'Effluent' points to a concrete structure. A yellow box labeled 'Extension of Sed tanks' points to a concrete structure. A large black text 'Contract Number NE/2015/01' is overlaid on the right side of the image. A date stamp '2019年6月28日 新界' is visible in the top left corner of the image.



C	THIRD ISSUE	190226	RA	JT
B	SECOND ISSUE	190320	RA	JT
A	FIRST ISSUE	181126	RA	JT
REV.	DESCRIPTION	DATE	BY	APP

CEPD 土木工程拓展署
Civil Engineering and Development Department

AECOM

TSEUNG KWAN O - LAM TIN TUNNEL - MAIN TUNNEL AND ASSOCIATED WORKS

PORTION IVC - EHC 2 & 7
SLIP ROAD (YAU LAI ESTATE SIDE)
TEMPORARY DRAINAGE DESIGN LAYOUT PLAN (STAGE 3)
(SHEET 1 OF 2)

LEIGHTON 中國建築
Leighton - China State Joint Venture

DRG. NO. H2645/C/LT/LCS/T01/294

CONTRACT NO. NE/2015/01 DATE OF ISSUE 2018-11-26

CHECKED BY RA DRAWN BY AF

SCALE 1:1000 STATUS FOR INFORMATION
DIMENSIONS ARE IN METRES PAPER SIZE A3



中國路橋
C R B C



CRBC-Build King Joint Venture

Our Ref.:JV/TKO-P2/NE201502/19.00.00.00/017621/L
Your Ref.: TLT/(NE/2015/02)/C30/650/(0205)



29 March 2021

AECOM Asia Company Limited
8/F, Tower 2, Grand Central Plaza
138 Shatin Rural Committee Road
Shatin, Hong Kong

By Hand

Attn.: Mr C. W. Lam, Dominic (CRE)

Dear Sir,

Contract No.: NE/2015/02
Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works
Submission of Layout Plan for Site Surface Run-off Control

We would like to submit herewith a Layout Plan for Site Surface Run-off Control so as to illustrate our site preparedness for the coming typhoon and wet season as per PS Clause 25.08.

Yours faithfully,
For and on behalf of
CRBC-Build King Joint Venture



YU Man Kit, Andy
Site Agent

Encl.

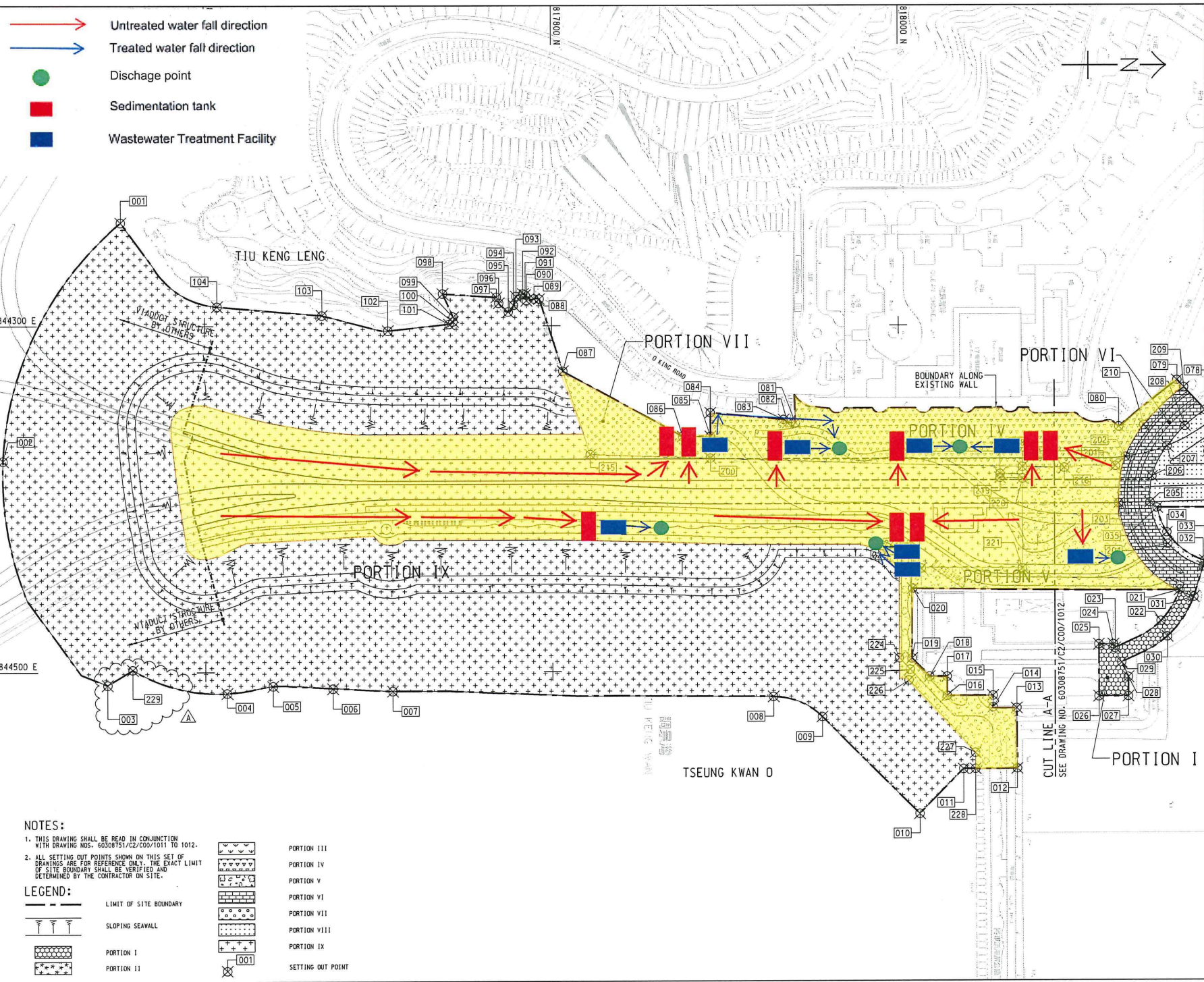
c.c.:

The Project Manager for the contract, (CE/E1, CEDD) – Attn.: Mr. Sunny SP LO
The Project Manager's Delegate, AECOM (HO) - Attn: Mr. Ivan Tsang

Fax: 2739 0076
Fax: 3922 9797

AY/GN/WW/RP/KC

Page 1 of 1



- Untreated water fall direction
- Treated water fall direction
- Discharge point
- Sedimentation tank
- Wastewater Treatment Facility

NOTES:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60308751/C2/C00/1011 TO 1012.
2. ALL SETTING OUT POINTS SHOWN ON THIS SET OF DRAWINGS ARE FOR REFERENCE ONLY. THE EXACT LIMIT OF SITE BOUNDARY SHALL BE VERIFIED AND DETERMINED BY THE CONTRACTOR ON SITE.

LEGEND:

- LIMIT OF SITE BOUNDARY
- SLOPING SEAWALL
- PORTION I
- PORTION II

- PORTION III
- PORTION IV
- PORTION V
- PORTION VI
- PORTION VII
- PORTION VIII
- PORTION IX
- SETTING OUT POINT

This drawing has been prepared for the use of AECOM, its clients, and its contractors. It is not to be used for any other purpose without the written consent of AECOM. AECOM shall not be responsible for any errors or omissions in this drawing, and shall not be liable for any consequences arising from its use. AECOM shall not be responsible for any errors or omissions in this drawing, and shall not be liable for any consequences arising from its use.

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PROJECT
TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT TITLE
TSEUNG KWAN O - LAM TIN TUNNEL ROAD P2 AND ASSOCIATED WORKS

CLIENT
CEDD 土木工程拓展署
 Civil Engineering and Development Department

CONSULTANT
AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分包工程顧問

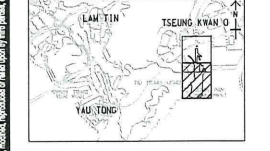
ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
B	SEP. 16	WORKING DRAWING	R/PC
A	FEB. 16	TENDER ADDENDUM NO. 1	R/PC
-	JAN. 16	TENDER DRAWING	R/PC

STATUS
 WORKING DRAWING

SCALE
 A1 : 1:1000
 METRES

KEY PLAN
 A1 : 1:50000



PROJECT NO.
 60308751

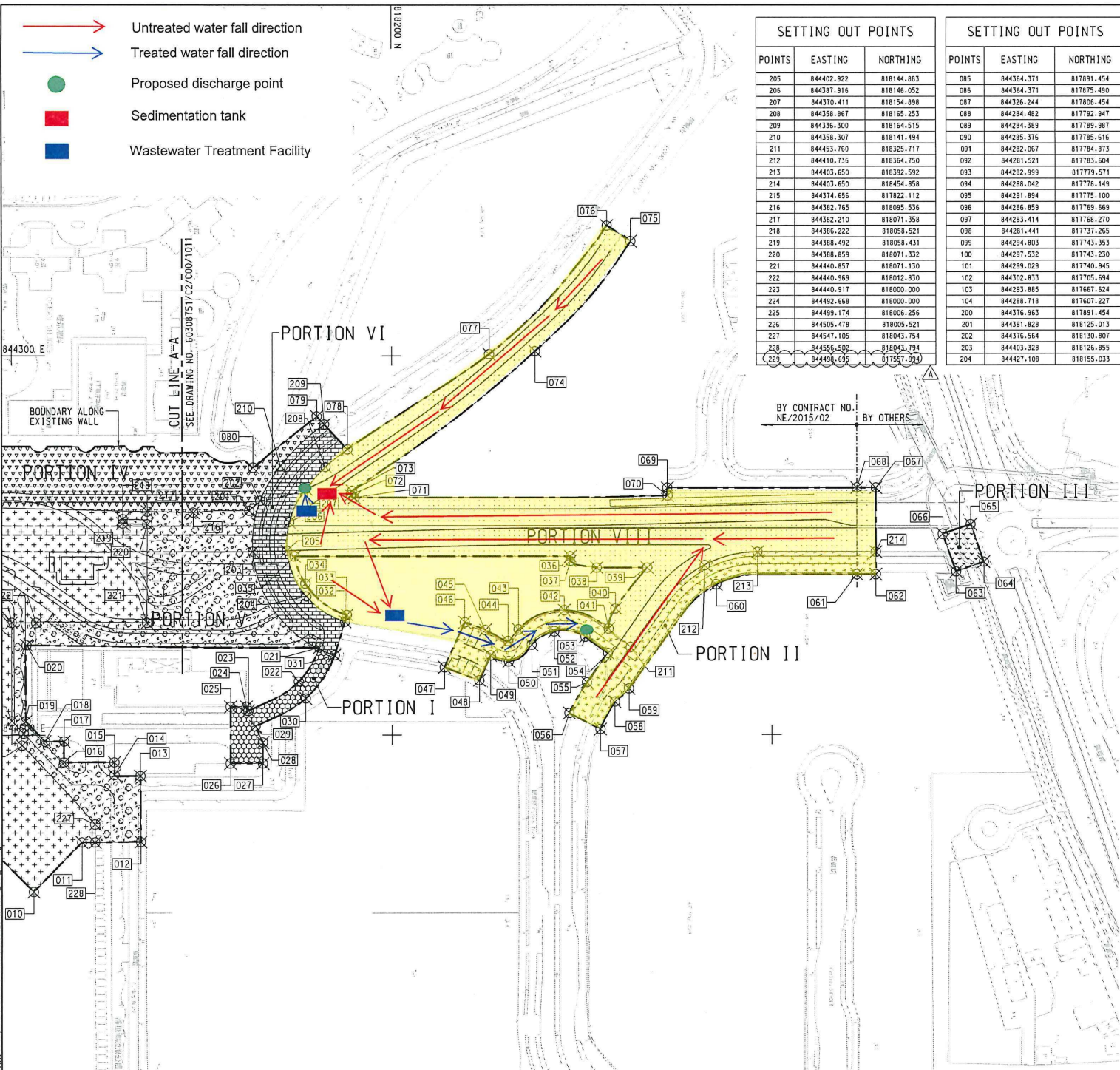
CONTRACT NO.
 NE/2015/02

SHEET TITLE
 PORTION OF SITE

SHEET NUMBER
 80308751/C2/C00/1011B

Project Management Table: Designer: AT/HI, Checker: PC/CA, Approved: CHN
 City: ISO A1 (60mm x 60mm)
 Project No.: 60308751
 Path: P:\Projects\60308751\URBAN\GIS\DWG\C2\001012.dwg, 012.dwg
 Date: 21/10/2015

- Untreated water fall direction
- Treated water fall direction
- Proposed discharge point
- Sedimentation tank
- Wastewater Treatment Facility



SETTING OUT POINTS		
POINTS	EASTING	NORTHING
205	84402.922	818144.883
206	844387.916	818146.052
207	844370.411	818154.898
208	844356.867	818165.253
209	844356.300	818164.515
210	844358.307	818141.494
211	844453.760	818325.717
212	844410.736	818364.750
213	844403.650	818392.592
214	844403.650	818454.858
215	844374.656	817822.112
216	844382.765	818095.536
217	844382.210	818071.358
218	844386.222	818058.521
219	844388.492	818058.431
220	844388.859	818071.332
221	844440.357	818071.130
222	844440.369	818020.830
223	844440.917	818000.000
224	844452.668	818000.000
225	844459.174	818006.256
226	844505.478	818055.521
227	844547.105	818043.754
228	844556.502	818040.194
229	844458.899	817571.520

SETTING OUT POINTS		
POINTS	EASTING	NORTHING
085	844364.371	817891.454
086	844364.371	817875.490
087	844326.244	817806.454
088	844284.482	817792.947
089	844284.389	817789.387
090	844285.376	817785.616
091	844282.067	817784.873
092	844281.521	817783.604
093	844282.999	817779.571
094	844286.042	817778.148
095	844281.894	817775.100
096	844286.359	817769.669
097	844283.414	817768.270
098	844281.441	817737.265
099	844284.803	817743.353
100	844287.532	817743.230
101	844289.028	817740.345
102	844302.833	817705.634
103	844283.885	817667.624
104	844288.718	817607.227
200	844376.363	817891.454
201	84381.828	818125.013
202	844376.564	818130.807
203	844403.328	818126.855
204	844427.108	818155.033

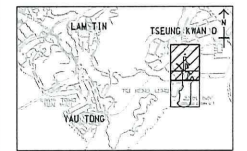
SETTING OUT POINTS		
POINTS	EASTING	NORTHING
001	844240.443	817551.753
002	844378.212	817483.648
003	844507.431	817651.547
004	844572.090	817627.455
005	844508.100	817638.302
006	844510.396	817707.874
007	844512.113	817769.940
008	844514.507	817827.403
009	844526.236	817875.571
010	844532.662	818011.583
011	844556.546	818036.852
012	844556.348	818067.859
013	844521.461	818067.035
014	844520.974	818054.006
015	844514.184	818053.562
016	844514.184	818027.500
017	844503.341	818027.533
018	844503.310	818017.436
019	844492.751	818007.313
020	844452.548	818007.806
021	844453.846	818161.851
022	844471.734	818150.993
023	844487.228	818124.474
024	844485.040	818123.474
025	844485.066	818115.080
026	844514.812	818115.080
027	844514.780	818132.072
028	844503.831	818132.066
029	844495.412	818128.216
030	844480.656	818154.679
031	844457.878	818169.920
032	844440.338	818175.353
033	844436.898	818176.414
034	844420.348	818154.523
035	844405.950	818148.828
036	844405.950	818253.952
037	844408.358	818253.952
038	844411.950	818307.882
039	844411.950	818334.450
040	844433.544	818317.697
041	844444.122	818314.082
042	844434.450	818290.757
043	844444.533	818266.647
044	844450.595	818261.204
045	844444.836	818249.176
046	844440.809	818238.366
047	844464.244	818227.720
048	844471.151	818246.011
049	844458.057	818251.971
050	844461.122	818261.598
051	844452.437	818273.632
052	844445.444	818285.889
053	844448.276	818301.825
054	844456.901	818313.763
055	844472.263	818302.664
056	844488.541	818293.366
057	844497.009	818309.725
058	844482.600	818317.345
059	844475.566	818324.746
060	844420.811	818370.795
061	844415.550	818444.858
062	844415.550	818454.858
063	844414.101	818497.107
064	844408.909	818511.699
065	844389.112	818504.792
066	844394.208	818490.092
067	844369.750	818454.858
068	844369.750	818444.858
069	844369.750	818345.114
070	844373.946	818345.217
071	844375.033	818180.335
072	844373.624	818178.424
073	844371.382	818179.206
074	844297.397	818275.538
075	844239.314	818325.845
076	844231.051	818313.326
077	844288.964	818251.396
078	844349.536	818176.741
079	844332.057	818160.618
080	844359.085	818127.054
081	844356.683	817940.562
082	844356.683	817936.032
083	844354.618	817933.769
084	844350.647	817891.454

AECOM
PROJECT: TSEUNG KWAN O - LAM TIN TUNNEL
CONTRACT TITLE: TSEUNG KWAN O - LAM TIN TUNNEL ROAD P2 AND ASSOCIATED WORKS
CLIENT: CEDD (Civil Engineering and Development Department)
CONSULTANT: AECOM Asia Company Ltd.
SUB-CONSULTANTS: 中環工程顧問有限公司

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
B	SEP.16	WORKING DRAWING	RPCM
A	FEB.16	TENDER ADDENDUM NO.1	RPCM
-	JAN.16	TENDER DRAWING	RPCM

STATUS: WORKING DRAWING
SCALE: A1 1:1000 METRES
KEY PLAN: A1 1:60000
PROJECT NO.: 60308751
CONTRACT NO.: NE/2015/02
SHEET TITLE: PORTION OF SITE
SHEET NUMBER: 60308751/C2/C00/1012B



PROJECT NO.: 60308751
CONTRACT NO.: NE/2015/02
SHEET TITLE: PORTION OF SITE
SHEET NUMBER: 60308751/C2/C00/1012B



Contract No.: NE/2017/02

**Contract Title: Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and
Associated Works**

Flooding Mitigation Plan

Treatment facility







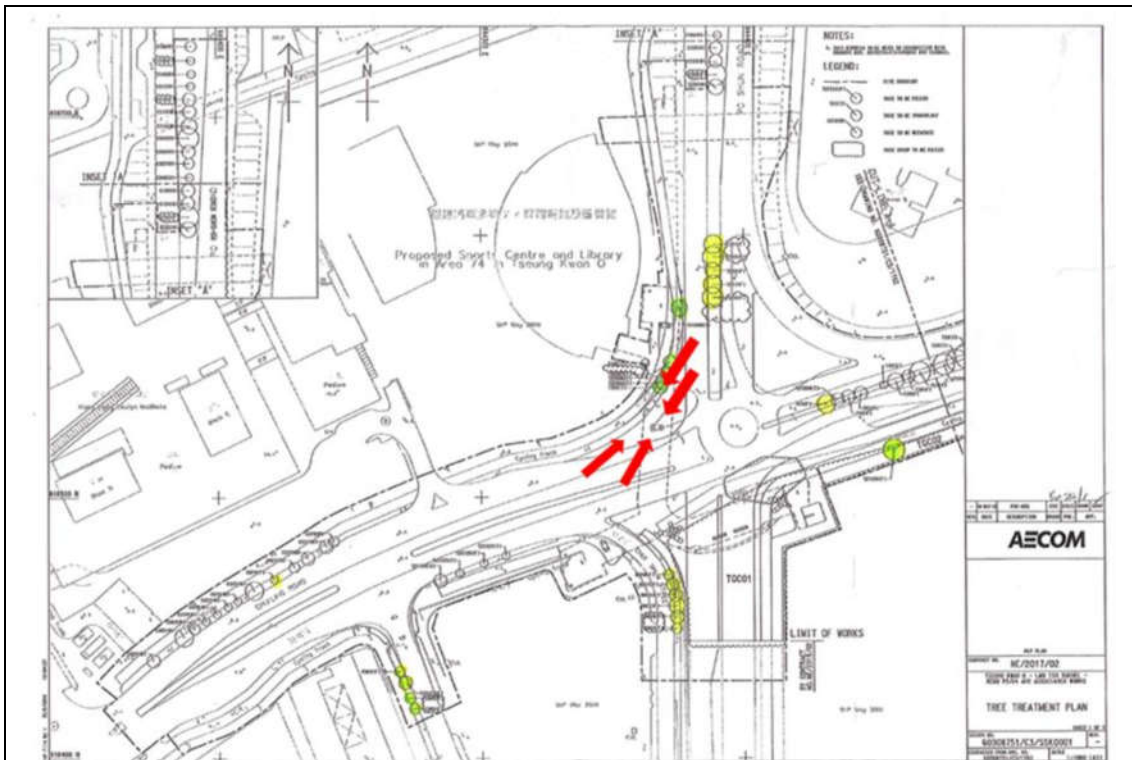
Bunding





Surface runoff collection





Height difference between the road and site area to form a natural flow. Sump pit was provided for wastewater collection.



Gully Protection

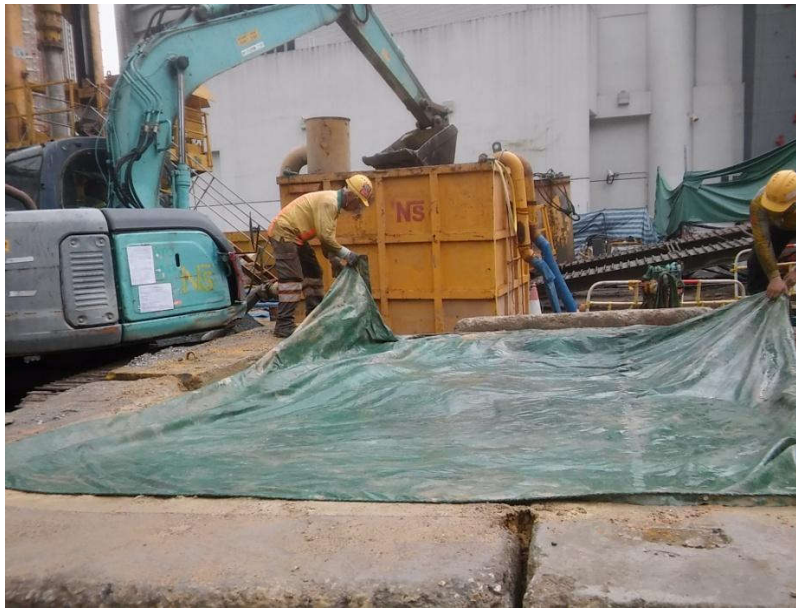


Gully were protected and covered by geotextile.



Stockpile Cover





Stockpile Should be proper cover with tarpaulin.

Site Surface Runoff Measures

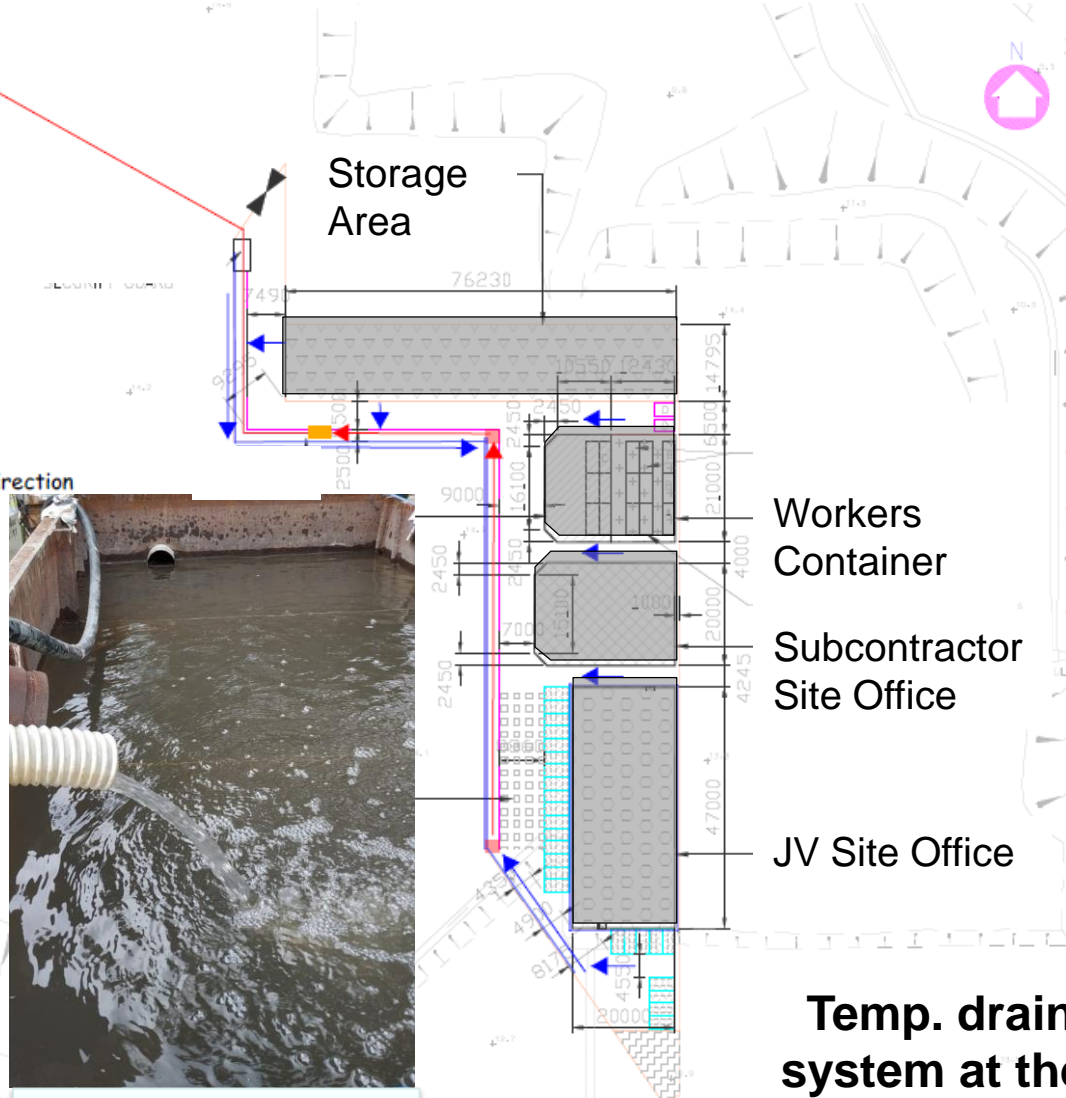
俊和-上隧-中冶聯營
CW - STEC - CMGC JV



Temp. Channel

Discharge to manhole "ZIA 4004921"

- ← channel / surface water flow direction
- ← water pump direction
- sump pit
- sedimentation tank



Sump Pit



Sedimentation Tank

Temp. drainage system at the site office area

**APPENDIX W
MONITORING RESULTS FOR POST-
RECLAMATION MARINE WATER
QUALITY MONITORING**

Appendix W

Monitoring Results for Post Reclamation Marine Water Quality Monitoring

Part I – Review of Action and Limit Levels for Post Reclamation Marine Water Quality Monitoring

Parameter	Depth	Action Level	Limit Level
Dissolved Oxygen (DO) in mg/L (See Note 1 and 2)	Surface Depth	Nil ^[3]	Nil ^[3]
	Depth Average	4.8 mg/L ^[4]	4 mg/L ^[5]
	Bottom	2.4 mg/L ^[4]	2 mg/L ^[5]

Notes:

- "depth-averaged" is calculated by taking the arithmetic means of reading of all sampling depths.
- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- No action and limit level is proposed for surface depth in accordance to the approved proposal for post-reclamation marine water quality monitoring.
- As an alert for adverse water quality impact, the Action Level is set as 120% of the Current WQOs for marine Waters of Hong Kong
- Current Water Quality Objectives (WQOs) for marine waters of Hong Kong.

The water depth at W2 on 8 Dec 2021 was **5.0m** and therefore the monitoring at mid-depth is omitted.

Part II – Review of Monitoring Results for Post Reclamation Marine Water Quality Monitoring at Surface Depth

Date	Depth (m)	DO (mg/L)	DO saturation (%)	Salinity (ppt)	pH	Temperature (°C)
8 Dec 2021	1.02	6.87	95.3	33.5	8.23	21.9
8 Dec 2021	1.01	6.88	95.3	33.5	8.23	21.9

Part III – Review of Monitoring Results for Post Reclamation Marine Water Quality Monitoring at Depth Average

Date	Depth (m)	DO (mg/L)	DO saturation (%)	Salinity (ppt)	pH	Temperature (°C)
8 Dec 2021	Omitted					
8 Dec 2021						

Part IV – Review of Monitoring Results for Post Reclamation Marine Water Quality Monitoring at Bottom Depth

Date	Depth (m)	DO (mg/L)	DO saturation (%)	Salinity (ppt)	pH	Temperature (°C)
8 Dec 2021	4.01	6.64	91.8	33.5	8.23	21.7
8 Dec 2021	4.02	6.64	91.8	33.5	8.23	21.7

Part V – Short Summary

No action or limit level of DO in mg/L was recorded in the reporting month.

**ANNEX 1
REVISED WASTE MANAGEMENT PLAN
(REVISION 2, UNDER CONTRACTOR
NE/2017/17)**



Civil Engineering and Development Department
East Development Office
8/F, South Tower, West Kowloon Government Offices
11 Hoi Ting Road
Yau Ma Tei
Kowloon

Your reference:

Our reference: HKCEDD08/50/107693

Date: 13 December 2021

Attention: Mr Lo Sai Park, Sunny

BY FAX & POST
(Fax no.: 2739 0076)

Dear Sirs

Agreement No.: NTE 06/2016
Independent Environmental Checker for Tseung Kwan O – Lam Tin Tunnel
Waste Management Plan for Main Bridge and Associated Works (Rev.2)

We refer to email of 7 December 2021 from AECOM/China Road and Bridge Corporation attaching the Waste Management Plan (Revision No. 2) for Entrustment Works under CBL.

We have no comment and hereby verify the captioned submission in accordance with Clause 2.6 of the Environmental Permit no. EP-458/2013/C.

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Edric Lau at 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LCCR/LTKE/lsm

cc AECOM – Mr Kingman Chan (email: kingman.chan@cbl1-aecom.com)
Cinotech – Mr H F Chan (email: hf.chan@cinotech.com.hk)
CRBC – Mr Calvin So (email: calvin.so@crbc.com.hk)

Our Ref: MA16034/Corres/Out/hf211207

Civil Engineering and Development Department

East Development Office
East Division 1
Project Division (1)
8/F, South Tower, West Kowloon Government Offices,
11 Hoi Ting Road,
Yau Ma Tei, Kowloon

By E-Mail
7th December 2021

Attn: Mr. LO Sai Park, Sunny

Dear Mr. Lo,

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel - Design and Construction
(Environmental Permit (EP) No. EP-458/2013/C)
Contract No. NE/2017/07 – Waste Management Plan (Rev. 2)

We refer to the Waste Management Plan (Rev. 2) submitted by China Road and Bridge Corporation on 7th December 2021 via email.

We are pleased to inform you that we have no further comment on the Waste Management Plan (Rev.2).

Should you have any queries, please contact our Ms. Karina Chan at 2157 3880 or the undersigned at 2151 2083.

Yours faithfully,

For and on behalf of
Cinotech Consultants Limited



Dr. H.F Chan
Environmental Team Leader

c.c. AECOM
ANewR
CRBC

Mr. Peter Poon
Mr. James Choi
Mr. Calvin So

By E-mail
By E-mail
By E-mail



Contract No:
NE/2017/07

Project Title:

**Cross Bay Link, Tseung Kwan O,
Main Bridge and Associated Works**

Waste Management Plan

Document No: CSF/WMP/00
Revision: 2
Date: 10 Mar 2021



Revision History and Amendment Summary

Revision No.	Description for Amendment	By	Date
0	Draft	Calvin So	28 Oct 2020
1	1 st Revision	Calvin So	29 Nov 2020
2	2 nd Revision	Calvin So	10 Mar 2021

Endorsed By:

Position	Signature	Name	Date
Site Agent		Raymond Suen	10 Mar 2021

Prepared by:

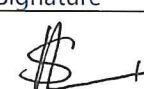
Position	Signature	Name	Date
Environmental Officer		Calvin So	10 Mar 2021



Table of Content

1.	INTRODUCTION	6
2.	SITE ORGANIZATION AND STAFF DUTIES	17
3.	SITE SPECIFIC WASTE MANAGEMENT	21
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Figures

Figure 1 Organization Structure

Appendices

- A Flow Chart of the Trip Ticket System
- B Notification to Truck Drivers
- C A Sample of Daily Record Summary, Sample of CHIT/DDF and DDF
- D A Sample of Waste Flow Table
- E Site Location Plan
- F Summary Table for Work Processes or Activities requiring timber for temporary work
- G Notification of Video Recording System for Dump Trucks
- H A Sample of Weekly Environmental Walk Inspection Report
- I Summary Table of Approved Alternative Disposal Grounds
- J Implementation Schedule for WMP



Abbreviations List

C&D	Construction & Demolition
CEDD	Civil Engineering and Development Department
CRBC	China Road and Bridge Corporation
DRS	Daily Record Summary
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring & Audit
EO	Environmental Officer
EPD	Environmental Protection Department
EP	Environmental Permit
ES	Environmental Supervisor
ET	Environmental Team
ETL	Environmental Team Leader
IEC	Independent Environmental Checker
NENT	North East New Territories Landfill
PFRF	Public Fill Reception Facility
PM	Project Manager
TKO137FB	Tseung Kwan O Area 137 Fill Bank
TTS	Trip Ticket System
WAC	Waste Acceptance Criteria
WFT	Waste Flow Table
WMP	Waste Management Plan



1. INTRODUCTION

The Waste Management Plan (WMP) has been developed in accordance with clause 2.6 of EP-458/2013/C for Entrustment Works and 2.5 of EP-459/2013 for Cross Bay Link (Main Bridge) of Environmental Permits for the Civil Engineering and Development Department Contract namely Contract No. NE/2017/07, Cross Bay Link, Tseung Kwan O – Main Bridge, Associated Works (hereinafter the Contract).

1.1 Project Description

The Works to be executed under this Contract No. NE/2017/07 include, but not exclusively, the following items:

- A. Access to any Part of the Site;
- B. Provision of the Project Manager' s Site Accommodation referred to in PS Clause 1.49 a wheel washing system according to PS Appendix 1.33;
- C. Application of Marine Department Notice (MDN) for marine works from the authorities;
- D. Requirements of various submissions on environmental aspects before commencement of and during construction of the works as stated in the Particular Specification, including but not limited to, the Environmental Management Plan referred to in PS Clause 1.130
- E. Requirements to provide, maintain and remove environmental mitigation and monitoring measures under the Environmental Monitoring and Audit programme;
- F. Design and submission of Contractor' s Designs including alternative design (if any), and the process of review and acceptance by the Project Manager and the authorities;
- G. Setting up of prefabrication yard of elements of steel arch bridge, bridge segments and bridge girder;
- H. Prefabrication of bridge segments and bridge girder and its transportation to site;
- I. Prefabrication of elements of steel arch bridge;
- J. Setting up of construction plant and temporary works for construction of each bridge required under this contract including piles, pile caps, piers, erection / assembly of bridge superstructure;
- K. Removal of temporary works and accesses;



- L. Erection of isolation panels and steel parapets;
- M. Installation of road lightings and functional lighting;
- N. Construction of E&M Plant Room;
- O. Procurement, factory acceptance test, delivery, temporary storage, safety measures in the installation of E&M works, testing and commissioning of E&M works;
- P. FSD' s agreement and confirmation on the arrangement and schedules of fire service inspection to the E&M works;
- Q. Roadworks and signage installation;
- R. Landscaping works and its establishment;
- S. Interfacing works with CEDD' s contracts of the Tseung Kwan O – Lam Tin Tunnel project and CEDD' s other contract of Cross Bay Link, Tseung Kwan O including the requirements to share Working Areas to other contractors to enter and/or work as stated in GS and PS Clauses 1.27, 1.31A and 1.45; and
- T. Liaison and coordination with the stakeholders.

1.2 Purpose of the Plan

This Waste Management Plan (WMP) aims to describe the arrangements for avoidance, minimization, handling, reuse, recovery and recycling, storage, transportation, collection, treatment and disposal of different categories of waste to be generated from the construction activities of this project. This WMP includes the recommended mitigations measures on waste management as contained as stipulated in EIA report and EM&A Manual.

The main objectives of the WMP include:

- (a) Providing reference to the waste management requirements, both statutory and non-statutory;
- (b) Clarifying the responsibilities of each party on waste management and the personnel within the Contractor' s management;
- (c) Establishing the waste management procedures for avoidance, minimization, material reuse/recovery/recycling, collection, transportation, storage, disposal and disposal routes of the wastes which generated from the site activities;
- (d) Setting up a method statement for stockpiling and transportation of the excavated materials and other construction wastes.



1.3 Environmental Management Policy

An Environmental Management Policy is established to demonstrate the Company' s commitment in improving environmental performance. It aims to communicate China Road & Bridge Corporation(CRBC)' s mission, vision and beliefs towards the environment to the staff and provides a framework for guiding CRBCs ongoing environmental improvement efforts.

The policy will be reviewed by relevant parties periodically and will be displayed on notice boards in languages suitable for the nationality for the workforce.

The Environmental Policy Statement, is listed below:



China Road and Bridge Corporation

China Road And Bridge Corporation (CRBC) undertakes the design, construction, operation, maintenance and project management of building and civil engineering works in both public and private sectors.


Protecting the environment is the responsibility of everyone in the organization. CRBC is committed to sustainable construction, climate change mitigation and minimise any adverse impact on the environment resulting from our business activities.

We are committed to delivering services with minimal impact to the environment through the following principles:

- Develop and implement an effective environmental management system fully complied with the requirements of ISO14001: 2015 with achievable environmental objectives and targets.
- Focus on protection of the environment, including prevention of pollution, waste minimization and resource conservation as critical considerations within our core management processes.
- Fulfilment with applicable compliance obligation to which the Company subscribes which relate to its environmental aspects.
- Regular performance reviews to ensure that environmental objectives and the requirements of Interested Parties are met.
- Provide sufficient resources and facilities for the implementation of environmental nuisance abatement and waste management.
- Provision of staff training to ensure understanding, implementation and development of these principles throughout our business.
- Enhance communication of the policy to all employees, package contractors and suppliers and any interested parties and ensure that it is available to the public.
- Seek continual improvement to enhance environmental performance than before through regular review of our EMS against the results of our efforts and the latest developments in the industry

All staff will follow the requirements of the Environmental Management System in the performance of their tasks and will ensure this policy is supported and maintained. This policy will be communicated to our customers, suppliers, and subcontractors. It will also be made available to the public whenever requested.

Signed:


Mr. Kan Jun
General Manager

Date: 17 Jun 2020

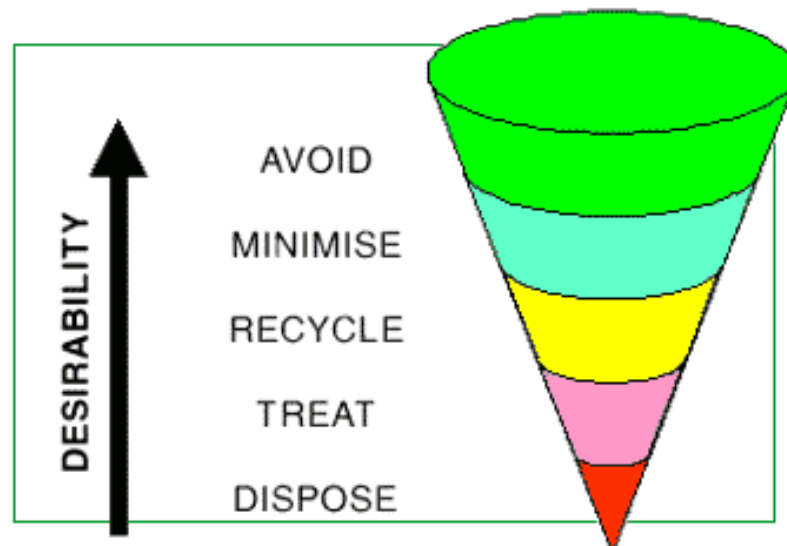


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1.4 The Waste Management Policy

To demonstrate the Project Team's commitment on the continual improvement of our waste management performance, an Environmental Management Policy includes the waste management has been established. It aims to communicate CRBC waste management mission, vision and beliefs to the staff and public, it also provides a framework in guiding the project team the basic requirements to be achieved in waste management.

The hierarchy is illustrated below. It attempts to evaluate waste management practices and selects the best practical option since conceptually it makes sense to avoid producing a waste rather than developing extensive treatment schemes. Good planning and site management practices also help minimizing over ordering or misuse of construction materials. The overall objective is to reduce and minimize the amount of wastes generated, hence reducing the costs of waste handling and disposal.



http://www.epd.gov.hk/epd/misc/cdm/management_intro.htm

The six major waste management principles are listed below:

Avoidance

CRBC will take following actions as to avoid and minimize waste generation. Construction works are planned discreetly so as to avoid unnecessary activities. Low waste technology will be applied whenever possible. Pre-cast/pre-fabricated construction components will be used. Bulk purchasing of materials will be avoided and just-in-time ordering will be adopted. Electronic communication and filing will be applied so as to minimize paper usage, printing and photocopying. Plants and devices will be maintained regularly so as to minimize repurchasing. Site promotion



and training will be conducted so that waste avoidance awareness of site personnel can be enhanced.

Reuse

CRBC will endeavor to reuse inert waste within own project or in other construction projects (alternative disposal ground) and please refer to Section 4.4 for detailed procedures.

Single-side-printed paper will be reused. Site office fabrications will be reused in constructing installations of other projects. Containers will be reused as temporary site office or materials storage chamber. CRBC will reuse as much reusable materials as possible so as to minimize amount of disposal.

Recovery and Recycling

Used paper will be recycled and collection bags will be provided at different area of site. Felled trees will be collected and some will be recovered into furniture. Plastic bottles will be recycled. Expired or damaged safety helmet will be recycled. CRBC will identify potential recoverable and recyclable wastes from waste generated in site and carry out corresponding recovering or recycling procedures.

Storage

C&D waste will be sorted and stored separately at different storage areas. Non-inert C&D waste will be stored in storage tanks and will be covered with tarpaulin sheet in temporary holding area. Inert waste will be stored on the hard standing and covered with tarpaulin sheet in temporary holding area. Please refer to Section 4.1 – 4.4 for detailed procedures.

Chemical waste will be stored in chemical waste chamber. Please refer to Section 4.5 for detailed procedures.

Collection

Waste materials will be sorted at production source. CRBC will provide sufficient waste disposal points and regular collection of waste. Sorted waste materials will be centralized and collected by corresponding contractors. Please refer to Section 4 for detailed procedures regarding to waste collection.



Disposal

All waste removed from site requiring disposal will be transported to approved facilities. Inert waste will be transported to TKO Area 137 Fill Bank. Non-inert waste will be transported to NENT. Slurry will be transported to TKO137 Fill Bank. If there is any bentonite slurry and it is intended to be disposed to public fill reception facilities, it will be mixed with dry soil on site before disposal. Otherwise, upon instruction from the Project Manager, CRBC will divert the inert construction waste to other public fill reception facilities as directed by the Project Manager.



1.5 Regulations and Guidelines

1.5.1 General

Various types of wastes would be generated during the course of the Project and each waste types requires different approach for management and disposal as stipulated in the waste legislation and guidelines. The relevant statutory and non-statutory requirements regarding waste management are summarized in the sections below.

1.5.2 Statutory Requirements

The following legislation relates to the handling, treatment and disposal of wastes in Hong Kong, and would be observed with regard to all wastes generated and requiring disposal, where applicable:

- Environmental Impact Assessment Ordinance (Cap 499)
- The Waste Disposal Ordinance (Cap 354)
- The Waste Disposal (Chemical Waste) (General) Regulation (Cap 354)
- The Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354)
- The Land (Miscellaneous Provisions) Ordinance (Cap 28)
- The Dumping at Sea Ordinance (Cap 466)
- The Public Health and Municipal Services Ordinance (Cap 132) - Public Cleansing and Prevention of Nuisances (Urban Council) and (Regional Council) By-Laws
- Summary Offences Ordinance (Cap 228)
- Other relevant regulations

1.5.2.1 The Waste Disposal Ordinance (WDO)

The Waste Disposal Ordinance (WDO) prohibits the unauthorized disposal of waste. Construction waste is not defined in the WDO, but is considered to fall within the category of "trade waste." Under the WDO, wastes can only be disposed of at sites licensed by EPD.

1.5.2.2 The Waste Disposal (Chemical Waste) (General) Regulation

Under the Waste Disposal (Chemical Waste) (General) Regulation all producers of chemical wastes (including asbestos) must register with EPD and treat their wastes either utilizing on-site plant licensed by EPD, or arranging for a licensed collector to take the wastes to a licensed facility. The regulation also prescribes the storage facilities to be provided on site, including labeling and warning signs, and requires the preparation of written procedures and training to deal with emergencies such as spillages, leakages, or accidents arising from the storage of chemical wastes.



1.5.2.3 The Waste Disposal (Charges for Disposal of Construction Waste) Regulation

The current policy related to the dumping of C&D material is documented in the Works Branch Technical Circular No. 2/93, 'Public Dumps'. Construction and demolition materials that are wholly inert, namely public fill, should not be disposed of to landfill, but taken to public filling areas, which usually form part of reclamation schemes.

Under the WDO and the Charging Regulation, wastes can only be disposed of at designated waste disposal facilities licensed by EPD. For construction work with a value of more than HK\$1M, the main contractor is required to establish a billing account at EPD before transporting the construction waste to the designated waste disposal facilities (e.g. landfill, public fill etc.). The vessels for delivering construction waste to public fill reception facility would need prior approval from EPD. Breach of these regulations can lead to a fine and/or imprisonment.

1.5.2.4 The Land (Miscellaneous Provisions) Ordinance

The Land (Miscellaneous Provisions) Ordinance requires that dumping licences be obtained by individuals or companies who deliver public fill to public filling areas. The Civil Engineering & Development Department (CEDD) issues the licences under delegated powers from the Director of Lands.

1.5.2.5 The Public Health and Municipal Services Ordinance (Cap 132) - Public Cleansing and Prevention of Nuisances (Urban Council) and (Regional Council) By-Laws

The Public Cleansing and Prevention of Nuisances By-Laws provide further controls on the illegal tipping of wastes on unauthorized (unlicensed) sites.

1.5.2.6 Related Licences and Permits

The Contractor would obtain all necessary permits and licenses under these ordinances including, but not limited to:

- Registration as a Chemical Waste Producer under the Waste Disposal Ordinance (Cap 354);



- Public Dumping License under the Land (Miscellaneous Provisions) Ordinance (Cap 28);
- Registration as a Waste Producer under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354).

1.6 Non-statutory Regulations

The following guidelines related to waste management and disposal would be adhered to during construction of the Project:

- Waste Disposal Plan for Hong Kong (1989), Planning, Environmental and Lands Branch Government Secretariat;
- Chapter 9 (Environment) of Hong Kong Planning Standards and Guidelines;
- New Disposal Arrangements for Construction Waste, EPD and CEDD (1992);
- Code of Practice on the Packaging, Labelling and storage of Chemical Wastes EPD (1992);
- Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste, EPD;
- Works Branch Technical Circular No. 12/2000, Fill Management, Works Bureau, HKSAR Government;
- Environment, Transport and Works Bureau Technical Circular (Works) No. 34/2002, Management of Dredged/Excavated Sediment, Environment, Transport and Works Bureau, HKSAR Government;
- Works Branch Technical Circular, 32/92, the Use of Tropical Hard Wood on Construction Site, Works Branch, Hong Kong Government;
- Works Branch Technical Circular No. 2/93, Public Dumps, Works Branch, Hong Kong Government;
- Works Branch Technical Circular No. 16/96, Wet Soil in Public Dumps, Works Branch, Hong Kong Government;
- Works Bureau Technical Circular NO. 4/98 and No.4/98A, Use of Public Fill in Reclamation and Earth Filling Projects, Works Bureau, HKSAR Government;
- Works Bureau Technical Circular No. 5/98, On-site sorting of Construction Waste on Demolition Site, Works Bureau, HKSAR Government;
- Waste Reduction Framework Plan, 1998 to 2007, Planning, Environment and Lands Bureau, Government Secretariat, 5 November 1998;
- Works Bureau Technical Circular No. 6/2002 and 6/2002A, Enhanced



Specification for Site Cleanliness and Tidiness, Works Bureau, HKSAR Government;

- A Guide to the Registration of Chemical Waste Producers;
- A Guide to the Chemical Waste Control Scheme;
- Works Bureau Technical Circular NO. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials; and
- Environment, Transport and Works Bureau Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site.
- Project Administration Handbook for Civil Engineering Works, 2018 Edition, Civil Engineering and Development Department



2. SITE ORGANIZATION AND STAFF DUTIES

2.1 Organization Structure

The organization structure for waste management is outlined in **Figure 1**. This chart outlines the overall site management in relation to waste management and environmental issues. Details on the roles and responsibilities of staffs responsible for implementation of the waste management plan are outlined below.

2.2 Roles and Responsibilities

CRBC have appointed the Environmental Officer as the senior staff member fully responsible for implementing and overseeing the operation of the WMP. And the Site Agent, Work Manager, Construction Supervisor are appointed a worker at each exit from the Site for the purpose of ensuring that every truck carrying C&D materials leaving the Site bears a duly completed, signed CHIT/DDF.

2.2.1 Project Director (PD)

The Project Director has responsibility for coordinating all environmental matters and reporting on these to the CRBC. Supervisory Board is responsible for all aspects of environmental issues within the project.

2.2.2 Site Agent (SA)

The Site Agent is also responsible for ensuring commitment and assigning resources to provide an effective environmental management program in the workplace. The Site Agent will also attend the Site Safety and Environmental Management Committee Meeting and the Site Safety and Environmental Committee Meeting if required.



2.2.3 *Work Managers (WM)

The Work Manager is a senior staff on site report to the Project Director has the responsibility to coordinate all instruct environmental matters on site with all relative authorities. Work Manager is also responsible for all site operations, management of environmental issues, staff supervision, control, coordination & planning, external liaison as well as implementing and monitoring necessary corrective actions. Works Manager is working full-time on the site.

The Work Manager will also carry out immediate action to rectify any non-compliance of environmental requirements as well as handle any complaints received from the public.

Work Manager has the responsibility to coordinate all environmental matters on site areas and to report these to the Site Safety and Environmental Committee, CEDD, EPD and Project Managers. The Work Manager is also responsible for ensuring commitment to environmental performance is fulfilled and assigning adequate resources and facilities. With the assistance of the Environmental Officer, he would also oversee the implementation and performance of the WMP. Works Manager reports to the Site Agent. He would assume environmental duties on site and ensure that works are executed in accordance with the WMP. He will arrange regular site inspections with the Environmental Officer.

**Work Managers: Foundation/Substructure, Plant Room, Concrete Bridge, Steel Bridge & E&M & Marine Work Manager*



2.2.4 Environmental Officer (EO)

The Environmental Officer (EO) will be appointed on site for the overall coordination, monitoring and overseeing the performance and implementation of the WMP for the Contract. The Environmental Officer reports to the Site Agent.

The responsibilities of the Environmental Officer are also included as follows:

- Review the Site Management Plan for Implementation of TTS and ensure works to be executed in accordance with the plan;
- Monitor and control the works including those of subcontractors to ensure compliance with specified requirements;
- Assist in handling any complaints received; and
- Ensure regular environmental monitoring is carried out, and that all environmental monitoring results are recorded.

2.2.5 Environmental Supervisor (ES)

Environmental Supervisor (ES) is responsible for the implementation of this WMP with the assistance of the site supervisor. They are also responsible for:

- Co-operate with the Environmental Officer to rectify any Non-conformances being identified;
- Attend environmental meetings whenever necessary;
- Carry out ad hoc environmental site inspections when deficiencies are being found; and
- Assist with Environmental Officer on any environmental accidents like chemical spillage.

2.2.6 Construction Supervisor

The Construction supervisors are responsible for Construction supervision and coordination of the works as well as implementation of any remedial actions or



environmental protection measures as directed by the WM/ EO.

The Construction supervisors are also responsible for:

- Assist in the daily implementation of the WMP including to ensure all waste is sorted, segregated, recycled or reused when applicable;
- Ensure the trip-ticket system is followed and all appropriate paperwork to be collected and signed off; and
- Ensure waste is avoided and/ or minimised as much as practically possible.

2.2.7 Workers

The workers are responsible to carry out the waste management practice. They are obligated to carry out the works like:

- Sorting of different types of wastes;
- Collection of wastes from each working sites to the temporary storage area/ designated fill banks/ landfills;
- General site cleaning; and
- Attend waste management training organized by the Environmental Officer following this site management plan.



3. SITE SPECIFIC WASTE MANAGEMENT

3.1 Waste Policy Principles

Refer to hierarchy abovementioned in Section 1, a further explanation of the hierarchy of waste management on site is detailed below.

3.1.1 Hierarchy of Waste Management

Key to waste management is to reduce the amount of waste generated from the work site. Waste management options would be exercised in accordance with the hierarchy stipulated in the following table:

Avoidance and Minimization	Avoid and minimize waste through careful planning and design works.
Reuse	Reuse construction waste such as excavated material, used wooden plants and ferric materials.
Recovery and Recycle	Undertake on-site or off-site waste recycling.
Treatment and Disposal	Properly treat and dispose of waste in accordance with legislative requirements, guidelines and good practices.

Table 2: Hierarchy of Waste Management

In the context of waste reduction, environmentally responsible purchasing would involve the introduction of practices that discourage unnecessary purchases and encourage the purchase of products with reduced packaging, increased durability and materials with high recycled content, such as, recycled paper, steel and other raw construction materials.

Waste minimization is best achieved through careful planning, design and supervision. Good management practices would reduce and prevent large amount of waste generated. Raw materials would be managed from the first instance before they are ordered and delivered to the site. Good estimation and planning would



minimize the amount of raw materials wasted. The generation of waste would be controlled at source.

3.2 Waste Reduction

Specific measures will be implemented to reduce the generation of waste materials, and thus minimize the amount of waste disposal to landfills. The measures will include:

- Sorting on site to recover the inert portion of C&D materials;
- Recover all metallic waste for recycling;
- Recover all cardboard and paper packaging, and properly stockpile them in dry and covered condition to prevent cross contamination;
- Use of the materials (such as formworks and hoardings) in the construction would be calculated before purchasing in order to minimize waste generation.
- Use of metal formworks and hoardings, and they would be recycled after demolition on site as far as it can before disposal.



4. WASTE MANAGEMENT PROCEDURES

The quantities of disposal C&D materials will be recorded under the barcode trip ticket system by using the "CHIT/DDF", see Appendix C. In addition, the filled "CHIT/DDF" will also be presented to the landfill site as part of the system for the disposal charging scheme which had already been officially effective in January 2006. Waste transaction records could be obtained either in the waste disposal facilities right after the transaction or retrieved from the EPD bill statement each month.

According to PS Appendix 6.1 & 25.5, the government disposal facilities assigned and designated for this project are North East New Territories landfill (**NENT**) for non-inert and Tseung Kwan O Area 137 Fill Bank (**TKO137FB**) for inert respectively.

Regarding disposal of marine sediment, a dumping permit issued under the Dumping at Sea Ordinance (Cap. 466) by the Director of Environmental Protection would be obtained prior to disposal of contaminated sediments. Dumping operation would be carried out in strict accordance with the method statement accepted by the Supervisor and strictly follow the procedures stipulated in Dumping Permit under Dumping at Sea Ordinance and Technical Circular (Works) No. 34/2002.

4.1 Acceptance Criteria for the Government Disposal Facilities

According to the Gazette Notice G.N.4278 dated 9 July 2010, the new WAC (as Tabulated below) became effective from 29 December 2010.

Vehicle Type	Waste Depth	Weight Ratio ^(note)	Designated Facility
Non-demountable Vehicle	Over 1.5m	No restriction	Landfill
	1.5m or below	0.20 or below	
Over 1m		No restriction	Landfill
Demountable Vehicle	1m or below	0.25 or below	



		Over 0.25	Sorting Facility
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Table 3: New Waste Acceptance Criteria

CRBC will comply with the acceptance criteria laid down by the operators of the corresponding fill bank(s) and landfill(s), as outlined below:

4.1.1 Acceptance Criteria for Fill Banks (Tseung Kwan O Area 137 Fill Bank)

- The Truck Driver should bear a duly completed and signed CHIT/DDF;
- The dump truck should also have a valid Dumping Licence issued by CEDD, dump trucks without Dumping Licences will be rejected;
- The inert C&D materials to be delivered to the fill bank(s) should be in accordance with the conditions stipulated in the Dumping Licence;
- Any over-sized inert C&D materials should be broken down to less than 250mm in size so as to facilitate its reuse by other reclamation or earth-filling projects;
- The C&D materials to be disposed should consist entirely of inert construction waste (i.e. 100% inert construction waste).

4.1.2 Acceptance Criteria for NENT Landfill (Northeast New Territories

Landfill)

- The Truck Driver should bear a duly completed and signed CHIT/DDF;
- The dump truck should also have a valid Dumping License issued by CEDD, dump trucks without Dumping Licenses will be rejected;
- The non-inert C&D waste to be delivered to the landfills should be in accordance with the conditions stipulated in the Dumping License;
- Construction waste containing not more than 50% by weight of inert C&D waste (Gazette Notice G.N. 4278 published on 9 July 2010);
- For a load of C&D waste not consisting entirely of bamboo, plywood or timber delivered by a vehicle, the weight of the waste divided by the permitted gross vehicle weight of the vehicle must not greater than 0.25 for goods vehicle with demountable skip and 0.2 for other types of vehicle (Gazette Notice G.N. 4278 published on 9 July 2010);



- Mixed C&D materials should be sorted at source to reduce the inert content as far as practicable to meet the above criteria before they are delivered to landfills;
- C&D waste delivered for landfill disposal should contain no free water and the liquid content will not exceed 70% by weight; and
- At least one week's notice, including contractors name and contact details etc, will be submitted to the EPD before starting to deliver the C&D waste to the landfills. EPD will be informed of any subsequent change to the disposal programme.

4.2 Procedures of the Trip Ticket System

CRBC will implement a Trip Ticket System (TTS) to track the disposal of C&D materials. Under the TTS, each truck carrying C&D materials leaving the Site for a disposal ground will bear a duly completed CHIT/DDF.

The Trip Ticket System will be executed according to the following procedures:

- The Construction Supervisor will arrange the C&D waste to be sorted on site. He will also check the total actual amount of cumulated C&D waste after the completion of the particular works in the working area;
- If the sorted C&D waste is less than 1/3 of truckload, then the C&D waste will be transferred to the temporary holding area in CRBC Works Area for temporary stockpiling. The C&D waste will be sorted and stored separately into different storage areas;
- Non-inert C&D waste will be stored in storage tanks properly covered with tarpaulin sheeting in the temporary holding area. Inert C&D materials will be stored on the ground properly covered with tarpaulin sheeting in the temporary holding area. Larvicidal oil or larvicide will be applied onto the stored C&D waste, if necessary;
- For every 7 days or one truckload collected, the stored non-inert C&D waste in the temporary holding area will be transferred to the designated landfills;
- For every 14 days or one truckload collected, the stored inert C&D waste in the temporary holding area will be transferred to the designated fill banks.
- If the sorted C&D waste is more than 1/3 of truckload, then the Site supervisor



- will arrange disposal of the C&D waste to designated fill banks/ landfills;
- For each truckload of C&D materials leaving the working area/ temporary holding area to the designated fill banks/ landfills, the truck driver must bear a duly completed, signed CHIT/DDF;
 - The truck will proceed to the disposal ground as stipulated in the CHIT/DDF. The truck driver will present the CHIT/DDF to the reception facility operator. If the C&D waste accords with the acceptance criteria, disposal of the C&D waste will be permitted and the facility operator will give the truck driver a transaction receipt and stamped CHIT/DDF;
 - The truck driver will present the CHIT/DDF at the in-weighbridge officially. If the vehicle load is accepted, the CHIT/DDF is deemed to be used and the in-weight would be recorded on the "Transaction Record Slip" ;
 - If the truck driver is instructed by the reception facility operator to go to the sorting facility. The driver will need return back to the site and report to the Site supervisor. Site supervisor shall also report to the EO and WM for this case. Load of the truck shall be unloaded back to the site and be delivered to reception facility only after sorted well into inert and non-inert;
 - The truck driver will then return the transaction record slip and the stamped CHIT/DDF to CRBC as soon as possible. All CHIT/DDF and the transcription are to be return to the EO;
 - CRBC will maintain a daily record disposal of C&D materials from the Site including details of the C&D waste, the truck number, departure time, etc, and should check against the Project Manager records as soon as possible and notify the Project Manager in case any discrepancy is noted;
 - A daily record of disposal of C&D materials from the Site will be maintained, the record includes the details of the C&D materials, the truck number, departure time, etc., using the Daily Record Summary (DRS);
 - The duly completed Part 1 of the DRS would be submitted promptly to the Project Manager;
 - For disposal at government disposal facilities, CRBC will check the information recorded in the DRS against the disposal records in CEDD' s website (http://www.cedd.gov.hk/eng/services/trip_ticket/index.html) or EPD' s website (<http://www.epd.gov.hk/epd/misc/cdm/trip.htm>) and complete Part 2 of the DRS for submission to the Project Manager within 1 working day after the records are posted at the EPD website; and



- Where an irregularity is observed or where requested by the Project Manager under special circumstances, CRBC will submit to the Project Manager within 5 working days after the recorded date of disposal the supporting evidence such as duly stamped CHIT/DDF and/or the transaction record slip (where relevant) to confirm proper completion of the delivery trips in question, or within 2 working days after the Project Manager has requested for such evidence, whichever is later. A fax copy of the CHIT/DDF and transaction record slip is acceptable, unless otherwise directed by the Project Manager. CRBC will maintain all records on the CHIT/DDF for at least one year or other period as may be directed by the Project Manager.
- For disposal at non-government facilities, CRBC will check the information recorded in the DRS against the disposal records within reasonable time.

4.3 Measures to Avoid Leakage in Waste Transportation

- All of the dump trucks used would be equipped with mechanical covers in which maintained in a good condition.
- In order to minimize the leaking of material from the dump trucks, no material should be stored higher than the trail board.
- Deposited silt and wastes on all dump trucks' wheels and bodies should be properly washed off by wheel washing facilities before leaving the constructions sites.
- CRBC will provide wheel washing facilities on site at the site entrance.
- According to 3.2 (d) of EP no. AEP-459/2013, barges and hopper excavators shall have tight fitting seals to their bottom openings to prevent leakage of material.

4.4 Disposal of C&D Materials to Alternative Disposal Ground(s)

Where CRBC have identified a project that can be an alternative disposal ground, CRBC will provide a detailed description of the alternative disposal ground, including location, lot number (where appropriate) and location plan(s) to the



Project Manager to request for his written approval.

Where the alternative disposal ground is a private construction project, CRBC will submit a letter from the Authorized Person of the development (as defined under the Building Ordinance) to confirm that:

- The C&D materials for use in the development is acceptable;
- The use of land so formed by the C&D materials is in conformity with the statutory town plan/ lease conditions;
- The Project Manager are allowed to enter the alternative ground to conduct inspection where necessary; and
- The estimated quantity and type of C&D materials to be used in the construction works and the approximate delivery programme, together with the name, post and specimen signature of the competent person to sign the DDF (see Appendix C)/ internal trip ticket stipulated in G.S. Clause 25.25(6)(a)(ii).

Where the alternative disposal ground is a private land but not a construction site, CRBC will submit a letter from the relevant authorities, such as the Lands Department and the Planning Department, to confirm that the suitability of the alternative disposal ground in receiving the proposed amount of C&D materials for use, and a written consent from the landowner.

Where the alternative disposal ground is a government project, CRBC will submit written consent from the project office of the alternative disposal ground to use the C&D materials generated from the Site, and to confirm the estimated quantity and type of C&D materials required and the approximate delivery programme.

A system for transmitting disposal records from the alternative disposal ground will be submitted to the Project Manager for approval before disposal to the alternative ground starts.

A summary table of approved alternative disposal ground will be updated and submitted thru "Site Management Plan for Trip Ticket System" for the record. The summary table will be attached in appendix I.



4.5 Chemical Waste/ Hazardous Waste Handling and Disposal

4.5.1 Chemical Waste Handling and Disposal

Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, will be handled in accordance with the Code of Practice on the Training, Packaging, Labelling and Storage of Chemical Wastes as follows:

Training

Waste and chemical handling training will be given to workers. Only competent and trained workers will be assigned to handle chemical waste. Only Registered Asbestos Contractor will be appointed to handle Asbestos Containing Materials.

Packaging

Chemical waste will be packed and held in containers of suitable design and construction so as to prevent leakage, spillage or escape of the contents under normal conditions of handling, storage and transport.

Containers used for the storage of chemical wastes will:

- Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;
- Have a capacity of less than 450 litres unless the specifications have been approved by the EPD; and
- Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.

Labelling

Every container of chemical waste will bear an appropriate label which will contain the particulars details. The waste producer will ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste.

Storage

The storage area will be specially constructed and bunded, and located close to the



source of waste generation. Only compatible containers will be used for chemical wastes storage.

The storage area for chemical wastes will:

- Be clearly labelled and used solely for the storage of chemical waste;
- Be enclosed on at least 3 sides;
- Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest;
- Have adequate ventilation;
- Be covered to prevent rainfall entering (water collected with the bund must be tested and disposed of as chemical waste); and
- Be arranged so that incompatible chemicals are stored separately.

Before reaching 80% capacity of the storage container, licensed waste collectors will be employed to remove the chemical waste.

Transportation and Disposal

After the chemical wastes have been packed, labelled, and stored, the chemical wastes will be transported by licensed waste collectors and disposed of at Chemical Waste Treatment Facility in Tsing Yi or other approved facilities.

4.6 General Refuse

4.6.1 Handling the General Refuse

Measures to be implemented to encourage waste avoidance/ minimization include:

- Reducing the number of photos copies to a minimum and by copying on both sides of paper for internal documents and external documents where appropriate;
- Preventing over-ordering of office equipment and consumables;
- Procuring green office equipment and consumables in terms of energy efficiency, recycled content and durability, etc;
- Deploying sufficient recycle bins in site offices to facilitate collection of recyclables including wasted aluminum cans, plastics bottles and papers;
- Deploying sufficient collection bins with cover at convenient locations at site to



- facilitate collection of non-recyclable for disposal at landfills; and
- General refuses will be removed frequently for disposal so as to reduce odour generation.

4.6.2 Handling of Construction Runoff and Sewage

During the construction stage, peripheral temporary surface channels will be constructed to collect surface runoff in the construction area for desilting before discharging into the adjacent waters.

The temporary drainage system during the construction phase will be formulated by the CRBC to match works and construction programme.

For office area, storm water is collected by surface channel and catchpit and further treated by settlement tank before discharge into existing drainage system nearby. For sewage collection will be by holding tank to be pumped out at regular interval for disposal.

Handling of sewage in terms sewage generated by human, adequate chemical toilets would be provided for collection.

Sufficient numbers of chemical toilets for workers and frontier workforces were placed on works area other than site offices.

4.6.3 Handling and Disposal of Sediment

CRBC control marine disposal of any dredged/excavated sediment under the Dumping at Sea Ordinance. Dredged/excavated sediment destined for marine disposal is classified based on its contaminant levels with reference to the Environment, Transport and Works Bureau Technical Circular (Works) No. 34/2002 - Management of Dredged/Excavated Sediment (ETWB TC(W) No. 34/2002).

CRBC keep the excavated sediment wet during excavation/boring and should be properly covered when placed on barges/trucks to minimise the potential odour /



dust emissions during boring, excavation and transportation of the sediment. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.

CRBC avoid stockpiling of contaminated sediments, if temporary stockpiling of contaminated sediments is necessary:

Excavated sediment will be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies;

Stockpiling areas will be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the WPCO.

Construction activities will not cause foam oil, grease, scum, little or other objectionable matter to be present on the water within the site or dumping grounds.

All bottom-dumping vessels / hopper barges / dredgers shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.

4.6.4 Estimate Quantities of C&D Material/ Waste

The following types of waste would be generated from the works areas and the workforce on site.

- C&D Waste/ materials from site clearance;
- Marine sediment & excavated materials from marine works
- Chemical waste from maintenance of plant and equipment; and
- General refuse from the workforce on site.



	Forecast of Total Quantities of Waste to be Generated from the Contract	Latest Estimate Disposal Waste Quantities
	Total Quantity Generated = A+B+C+D	3303.73 m ³
A	Marine Sediment	1644.62 m ³
B	Reused in the Contract	100.00 m ³
C	Reused in other Projects	0 m ³
D	Disposed as Public Fill	1559.11m ³
E	Imported Fill	0 m ³
F	Metals	5000 kg
G	Paper/ Cardboard packaging	1000 kg
H	Plastics	200 kg
I	Chemical Waste	500 kg
J	Others e.g. general waste	3000 m ³

**Quantity of each category of marine sediment is based on calculation according to the method statement by the construction team.*

4.6.5 Use of Timber

CRBC aims to avoid, reduce or minimize the use of timber in temporary construction activities. Where the use of timber is unavoidable for temporary works construction processes or activities with an estimated quantity of greater than 5m³, CRBC will submit a method statement to the ER for agreement before starting the relevant temporary works. The method statement will include the justifications for the use and the measures taken to minimize the use of timber.

The summary table of timber usage will be updated and submitted to the Project Manager for monitoring and review by not later than the 15th day of each month or, if it is a general holiday, the day following the general holiday, or a day agreed upon with the PM.

The Summary Table for Work Processes or Activities requiring timber for temporary work is attached in **Appendix F** respectively.



4.7 Handling of Recyclables

Before starting the transportation of recyclable materials off site to recycling facilities,

CRBC will meet with recycling contractors to establish a suitable system for collecting recyclable materials with care.



5. DISPOSAL PROGRAMME

The relevant licensing legislation and licensing/ control requirement is listed in **Section 1** above.

There will be inert C&D materials (comprising soil, broken rock and concrete, etc), non-inert C&D materials and slurry and bentonite generated under Contract No.: NE/2017/07. With reference to the clause 25.25(1) of PS, the designated disposal grounds for mentioned are listed as follows:-

- Inert C&D Materials:
 - Tseung Kwan O Area 137 Fill Bank or other disposal grounds as directed by the Project Manager
- Slurry and Bentonite
 - Tseung Kwan O Area 137 Fill Bank
- Non-inert C&D Materials:
 - North East New Territories Landfill (NENT)

Monthly Summary for C&D material disposal off the Site will be provided to indicate the actual quantities, types of C&D materials and corresponding disposal ground in Waste Flow Table (WFT).

Disposal locations for inert C&D materials would be Tseung Kwan O Area 137 Fill Bank. The non-inert C&D materials would be disposed to NENT landfill. Tseung Kwan O Area 137 Fill Bank is designated for slurry and bentonite disposal.

Wheel washing facilities would be installed at works areas. These facilities would be cleaned at least twice daily.



6. NOTIFICATION TO TRUCK DRIVERS

CRBC will write to all truck drivers whom he or his sub-contractor(s) has engaged for removal of C&D materials from the Site and draw their attention to the following particular points:

- Each truck carrying C&D materials leaving the Site for a disposal ground must bear a duly completed CHIT/DDF, irrespective of the location and nature of the disposal ground;
- The C&D materials must be disposed of at the disposal ground as stipulated in the CHIT/DDF;
- What constitute and improper disposal and that the Public Fill Committee (PFC) will consider revoking the Dumping Licence from the holder of the offending trucks; and
- Truck drivers must bear a valid Dumping Licence that he can apply from the Civil Engineering and Development Department (CEDD).

The Flow Chart of the Trip Ticket System and the notification to truck drivers and the receipt form is attached in **Appendix A** and **B** respectively.



7. WASTE MANAGEMENT RECORDS

The CHIT/DDF will be used for each and every vehicular trip transporting construction and demolition (C&D) material off site.

Prior to the vehicle leaving the site, the Project Manager will insert the date, time of departure, vehicle licence plate number, designated public filling facility/ landfill, and other information as required. The form will be carried on board the vehicle at all times throughout the vehicular trip.

A comprehensive register of the CHIT/DDF issued will be maintained and available for inspection by the Project Manager upon request. The following records will be kept for monitoring of the CHIT/DDF issued:-

Daily Record Summary (DRS) and the Waste Flow Table (WFT) should be completed and submitted to the Project Manager for record. A sample of DRS and WFT, please refer to **Appendix C** and **D** respectively.

CHIT/DDF, the DRS and WFT issued will be made available for inspection by ET and IEC upon request.

Waste Flow Table – Monthly

Record of the quantities of C&D materials generated each month will be maintained using the monthly summary Waste flow Table (WFT). CRBC will complete and submit the monthly summary WFT to the Project Manager by not later than the 15th day of each month follows the reporting month, or if it is a General Holiday, the day following the General Holiday, or a later date as agreed by the Project Manager.



Waste Flow Table – Yearly

The estimated quantities of C&D materials to be generated each year from the site will be summarised using the yearly summary WFT. The WFT will be updated on a half-yearly basis and submit to the Project Proponent by not later than 1st of June and December of each year, or if it is a General Holiday, the day following the General Holiday, throughout the construction period in order to account for the revised works programme and latest outturn on the quantities of C&D materials generated from the site.

These summaries shall also be made available to ETL and IEC.

Specific trip ticket and records for internal transfer of C&D materials and imported fill materials will also be kept for monitoring whatever necessary.

For recyclable materials, CRBC' s Representative will record the quantities of all the recyclable materials before removal off the Site by the recycling contractors, and include the details in the WFT for submission to the Project Manager.

Video Monitoring System

In order to ensure proper disposal of C&D materials, enhancement measures to further improve the TTS recording system, a video recording system shall be installed and disposal shall be checked against survey record. Pursuant to PS Clause 25.25(6) (g), video recording system is required to be installed, operated and maintained at each vehicular exit/entrance to record all truck leaving the Site. CRBC will also check the disposal records against the video records to ensure the proper disposal of C&D materials. Following essential features are needed to fulfill:

- The video cameras used in the system shall be high resolution, lowlight and colour type;
- Power back up shall be provided to cater for accidental breakdown of the power supply to the system;
- Video captured by the system shall be recorded continuously without break except with the agreement of the Project Manager or in the month during which there is no disposal of C&D materials off the Site for the entire month;
- Video shall be captured in a format acceptable to the Project Manager;



- The registration mark of each vehicle leaving the site shall be recorded; and
- The loading conditions of dump trucks including empty trucks shall be captured.
- Post sufficient notices at conspicuous positions to notify the workers, drivers and staff about the purpose of the video recording system in accordance with data protection principles set out in the Personal Data (Privacy) Ordinance. The sample of notification of video recording system for dump trucks is shown in Appendix G.



8. WASTE MONITORING AND AUDIT

The aims and objectives of waste management audit are:

- To ensure that the waste arising from works are handled, stored, collected, transported and disposed of in an environmentally acceptable manner;
- To ensure that the handling, storage, collection and disposal of waste arising from the demolition works comply with the relevant requirements under the Waste Disposal Ordinance and its regulations, and this WMP;
- To ensure recommended mitigation measures in the Implementation Schedule of Mitigation Measures of the EM&A Manual Appendix J is properly implemented; and
- To encourage the reuse and recycling of materials.

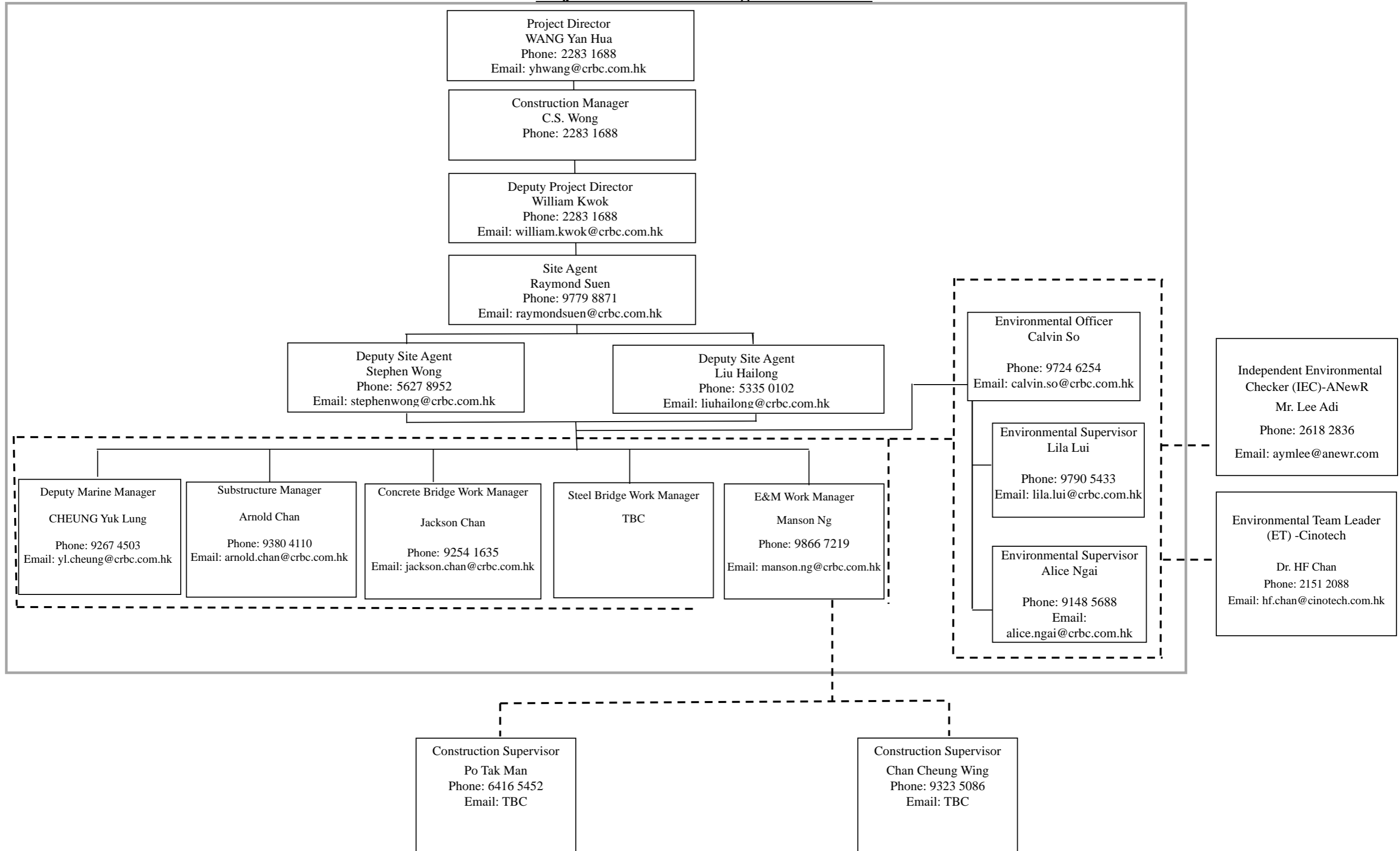
The ET, with assistance from the Site Agent would audit the waste management practices during the weekly environmental site inspection to evaluate the overall performance of the implementation of the WMP and ensure the appropriate control measures are properly implemented. Observations and findings identified by the ET during weekly inspection shall be rectified by the CRBC. Sample weekly environmental site inspection report is shown in Appendix H.



Figure 1
The Organization Structure

Line of responsibilities ————
 Line of communication - - - - -

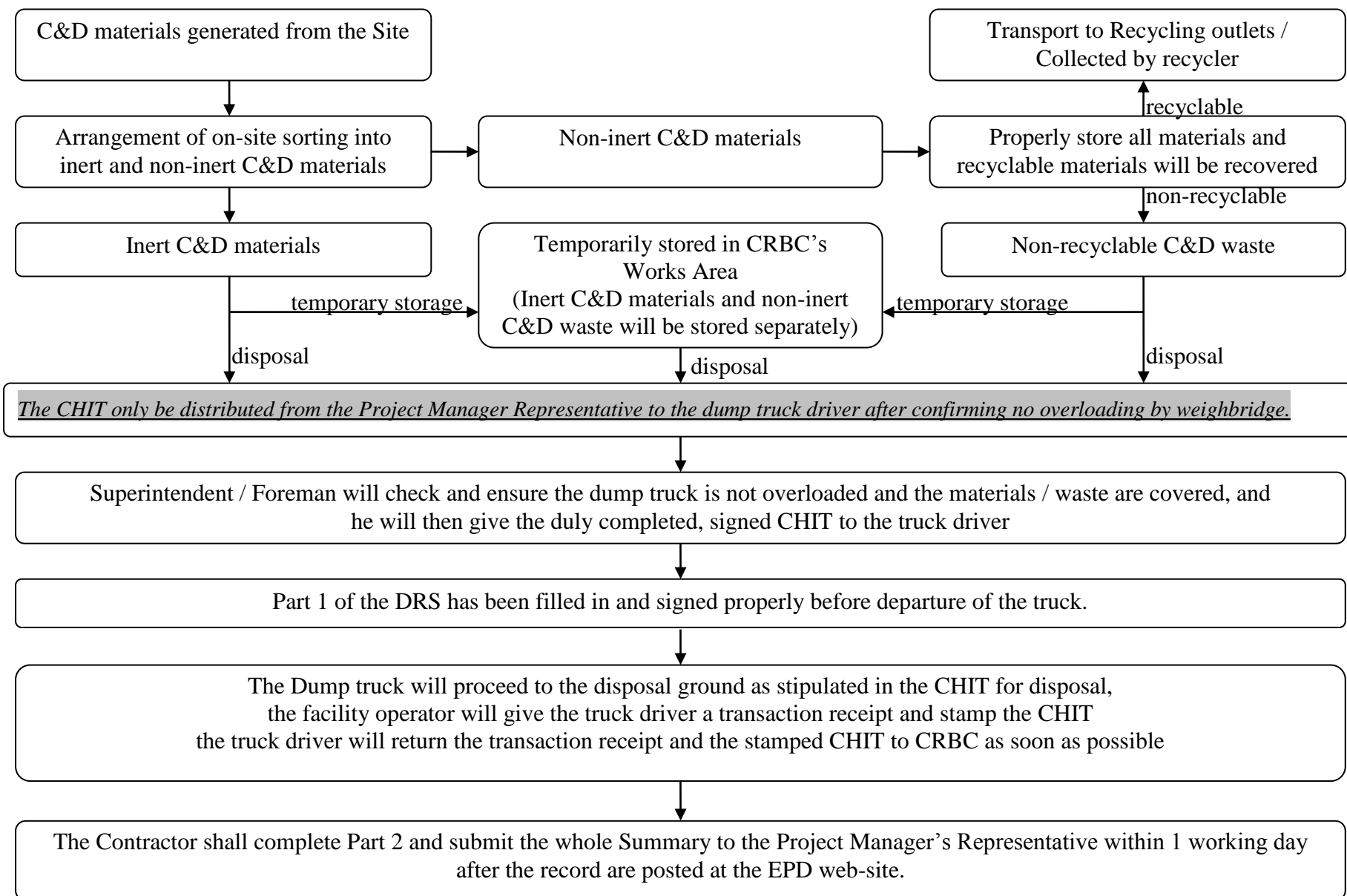
Project Environmental Organization Chart





Appendix A

Flow Chart of the Trip Ticket System





Appendix B

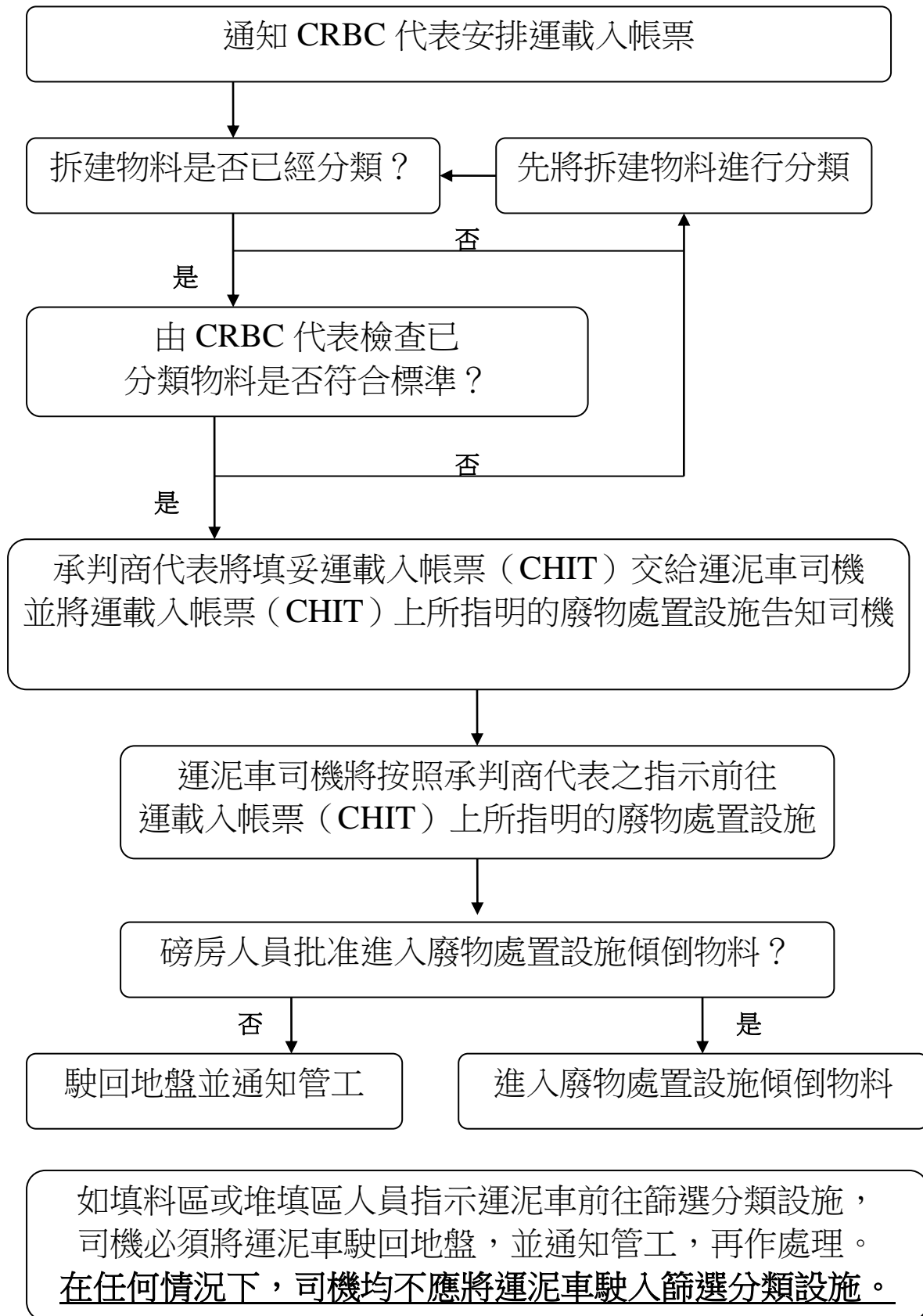
Notification to Truck Drivers

合約 NE/2017/07
運載物料及傾倒時需注意及檢查事項

運泥車司機於運載物料及離開地盤前，司機必須注意並檢查以下事項：

1. 運泥車上的物料已經篩選分類為：
 - a. 惰性（如泥土、石屎頭、石頭、碎石等）；
 - b. 非惰性（如樹枝、鐵枝、一般垃圾等）。
 2. 運泥車沒有超載。
 3. 車軌及車身已經徹底清洗及泥斗上物料已經完全蓋好。
 4. 運載記錄票上的第一截已交給駐地盆監工人員。
 5. 司機已持有有效的傾倒執照。
 6. 司機已持有運載入帳票（綠色）並票上的所有資料已經填妥。
 7. 必須依照運載入帳票（綠色）所指明的地點進行傾倒。
 8. 如司機沒有持有已填妥資料的運載入帳票（綠色）而離開地盤進行傾倒；或運泥車駛往非運載入帳票（綠色）所指明的地點進行傾倒；或司機於傾倒後未能提供已蓋印的運載入帳票（綠色）及傾倒記錄，則會構成不當傾倒。
 9. 如運泥車駛往非指明的地點進行傾倒，並該地點為私人土地；或運泥車非法傾倒，則會構成嚴重不當傾倒。
- ※ 運泥車不當傾倒或嚴重不當傾倒可被吊銷傾倒執照。

合約 NE/2017/07
運載物料及傾倒流程表





Appendix C

A Sample of Daily Record Summary

PS Appendix 25.7
CHIT
(PS Clause 25.25(6)(a)(iii))

A sample of “CHIT” to be used for disposal of construction & demolition (C&D) materials at a prescribed facility

入帳票編號:
Chit No.: _____

選擇「✓」一個註明設施:
Tick (✓) One Prescribed Facility:

堆填區 Landfills 篩選分類設施 Sorting Facilities

公眾填料接收設施 Public Fill Reception Facilities

離島廢物轉運設施 Outlying Islands Transfer Facilities

車牌號碼 Vehicle Registration Mark: _____

使用日期: _____
Date of Use: _____

簽發人: _____
Issued by: _____

建築廢物產生地點: _____
Construction Waste Generated Site: _____

帳戶編號: _____
Account No.: _____

甲部份: 由帳戶戶主保留
Part A: retained by Account-holder

入帳票編號:
Chit No.: _____

選擇「✓」一個註明設施:
Tick (✓) One Prescribed Facility:

堆填區 Landfills 篩選分類設施 Sorting Facilities

公眾填料接收設施 Public Fill Reception Facilities

離島廢物轉運設施 Outlying Islands Transfer Facilities

車牌號碼 Vehicle Registration Mark: _____

使用日期: _____
Date of Use: _____

簽發人: _____
Issued by: _____

帳戶名稱: _____
Name of the Account-holder: _____

帳戶編號: _____
Account No.: _____

乙部份: 由廢物運輸商保留
Part B: retained by Waste Hauler

香港法例第354章廢物處置條例
廢物處置(建築廢物處置收費)規例
Waste Disposal Ordinance (Chapter 354)
Waste Disposal (Charges for Disposal of Construction Waste) Regulation

載運入帳票
CHIT

車牌號碼:
Vehicle Registration Mark: _____


有效期至: _____
Valid Until: _____

建築廢物產生地點:
Construction Waste Generated Site: _____

帳戶名稱:
Name of the Account-holder: _____

E 199279

 **CEDD**
Civil Engineering and
Development Department

 **環境保護署**
Environmental
Protection
Department

丙部份: 由政府保留
Part C: retained by Government

Sample of the Disposal Delivery Form (DDF) for Disposal of C&D Materials at Disposal Grounds (Other than Prescribed Facilities) as Designated in the Contract or as Directed by the Architect/Engineer, or Alternative Disposal Grounds Proposed by the Contractor and Approved by the Architect/Engineer

<p>Serial No. 0012345678</p> <p>Date of Use: 使用日期: _____</p> <p>Disposal Ground : 接收設施: _____</p> <p>Vehicle Registration Mark. : 車牌號碼: _____</p> <p>Issued By: 簽發: _____</p> <p><i>(This part retained by Disposal Ground)</i> <i>(此部分由接收設施保留)</i></p> <p>_____</p> <p>Chop of Disposal Ground 接收設施蓋印</p>	<p align="right">Serial No. 0012345678</p> <p align="center">Construction and Demolition Materials Disposal Delivery Form 拆建物料運載記錄票</p> <p>Contract No: _____ Contract Title: _____</p> <p>合約編號: _____ 合約名稱: _____</p> <p>Date of Use: _____ Time of departure from site: _____ Vehicle Registration Mark: 使用日期: _____ 離開地盤時間: _____ 車牌號碼: _____</p> <p>Disposal Ground: 接收設施: _____</p> <p>Arrival Time/Date: 抵達日期/時間: _____ <i>(This part retained by Contract/Driver)</i> <i>(此部分由承建商/司機保留)</i></p> <p>_____</p> <p>Chop of Disposal Ground Representative 接收設施蓋印</p> <p align="right">Chop of Engineer's/Architect's 工程師 / 建築師代表蓋印</p>
--	---

**PS Appendix 25.6
(PS Clause 25.25(6)(a)(ii))**

“Daily Record Summary” to record daily disposal of construction & demolition (C&D) materials from the *Site
“每日運載記錄摘要” 記錄每日由*地盤所傾卸的拆建物料

- (1) Contract no. & title 合約編號及名稱 : _____
- (2) Date of disposal 傾卸日期: _____
- (3) Disposal ground (s) designated in the Contract or directed by the Architect/Engineer 合約指定或建築師/工程師指示接收設施: (a) _____
(b) _____
Others 其它 _____
- (4) Approved alternative disposal grounds 另可接受的接收設施 _____

CHIT/ DDF no. 載運入帳 票/ 拆建 物料運載 記錄票編 號	Vehicle registration mark 車輛登記號 碼	Approx. vol (e.g. Full/Three Quarter/Half/One quarter) 大約承載量 (例如全、 3/4、半、1/4)	C&D materials type (e.g. inert or non-inert) 建築廢料種類 (例如惰性 或非惰性)	Disposal ground 接收設施	Signature & Name of the Contractor's Designated person before departure 於離開地盤 前, 承建商 的指定人 仕姓名及 簽名	Departure time from *Site 離開地盤 時間	Signature & name of the Architect/Engineer's supervisory staff before departure or other time as agreed between the Architect/Engineer's Representative and the Contractor ¹ 於離開地盤前或其它經承建商與建 築師/工程師代表同意的時間, 建築師 /工程師監管人員姓名及簽名	Actual disposal ground 真正接收設 施	Arrival time at disposal ground 抵達接收設 施 時間	Remarks 備註:

Part 1² 甲部

Part 2³ 乙部

Submitted by 呈交 :

[Name of Contractor's Designated Person
承建商的指定人仕姓名

Signature 簽名 :

Date 日期:

Received by 接收 :

[Name and signature of the
Architect/Engineer's staff]
建築師/工程師監管人員姓名及簽名

Post 職位 :

Date & Time 日期及時間 :

¹ For term contract, if there are no full time site supervisory staff, the Architect/Engineer's supervisory staff should spot check and then sign as appropriate in accordance with paragraph 25 of DEVB TC(W) 6/2010 定期合約, 如沒有全職地盤監管人員, 應根據 DEVB TC(W) 6/2010 的第 25 段進行定點檢查及簽署

² Part 1 甲部- The Contractor shall complete Part 1 in duplicate and a copy should be kept by the Architect's/ Engineer's Representative. 承建商填寫甲部兩份, 副本由建築師/工程師代表持有

³ Part 2 乙部- The Contractor shall complete Part 2 and submit the whole Summary to the Architect/Engineer's Representative within 1 working day after the records are posted at the EPD web-site. 承建商填寫乙部及將整份運載記錄摘要於記錄上載在環境保護署網頁後 1 個工作天內呈交給建築師/工程師代表

*Delete "Site" and substitute "Sites" for term contracts. 定期合約將 "Site" 刪去及以 "Sites" 代替



Appendix D

A Sample of Waste Flow Table

Name of Department: Civil Engineering and Development Department

Contract No.: NE/2017/07

Monthly Summary Waste Flow Table for ____ (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan											
Feb											
Mar											
Apr											
May											
June											
Sub-total											
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total											

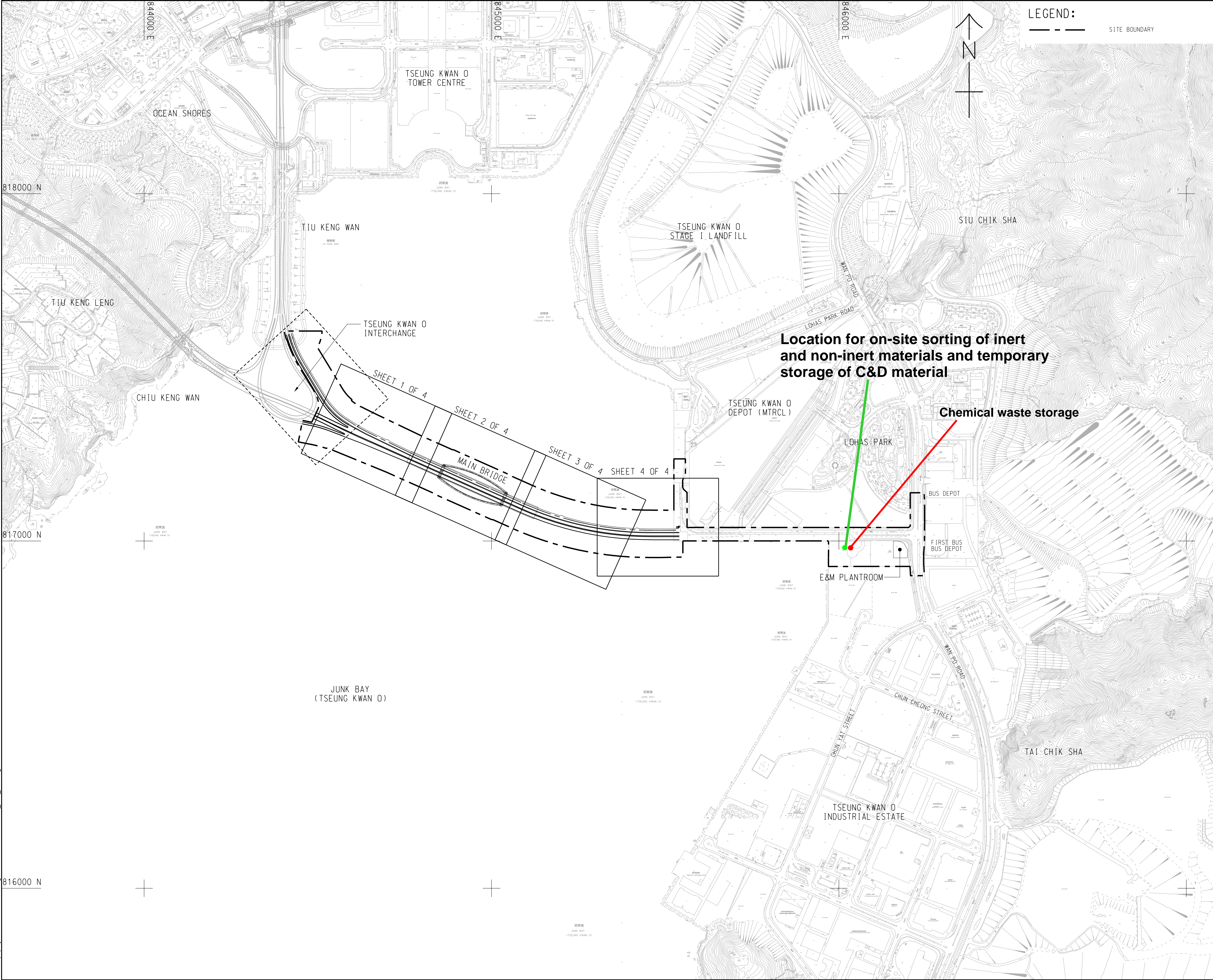
Forecast of Total Quantities of C&D Materials to be Generated from this contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)

- Notes:
- (1) The performance targets are given in PS Clause 6.14.
 - (2) The waste flow table shall also include C&D materials that are specified in this contract to be imported for use at the Site.
 - (3) Plastics refer to plastic bottles / containers, plastic sheets/foam from packaging material
 - (4) The *Contractor* shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the *works*, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the *works* is equal to or exceeding 50,000 m³.



Appendix E Site Location Plan

Project Management Initials: **WJ** Designer: **WN** Checked: **RPCM** Approved: **CWN** ISO A1 594mm x 841mm
 Plot File by: HUPF 2017/12/28 PATH: P:\projects\60329339\Drawing\CONTRACT\11000\CI_C00_1000.dgn



LEGEND:
 - - - - - SITE BOUNDARY



PROJECT
 項目
CROSS BAY LINK, TSEUNG KWAN O

CONTRACT TITLE
 CROSS BAY LINK, TSEUNG KWAN O
 MAIN BRIDGE AND ASSOCIATED WORKS

CLIENT
 業主
 土木工程拓展署
 Civil Engineering and
 Development Department

CONSULTANT
 工程顧問公司
 AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工程顧問公司

ISSUE/REVISION
 修訂

I/R	DATE	DESCRIPTION	CHK.
-	DEC.17	TENDER DRAWING	RPCM

STATUS
 階段

SCALE
 比例
 A1 1 : 5000

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

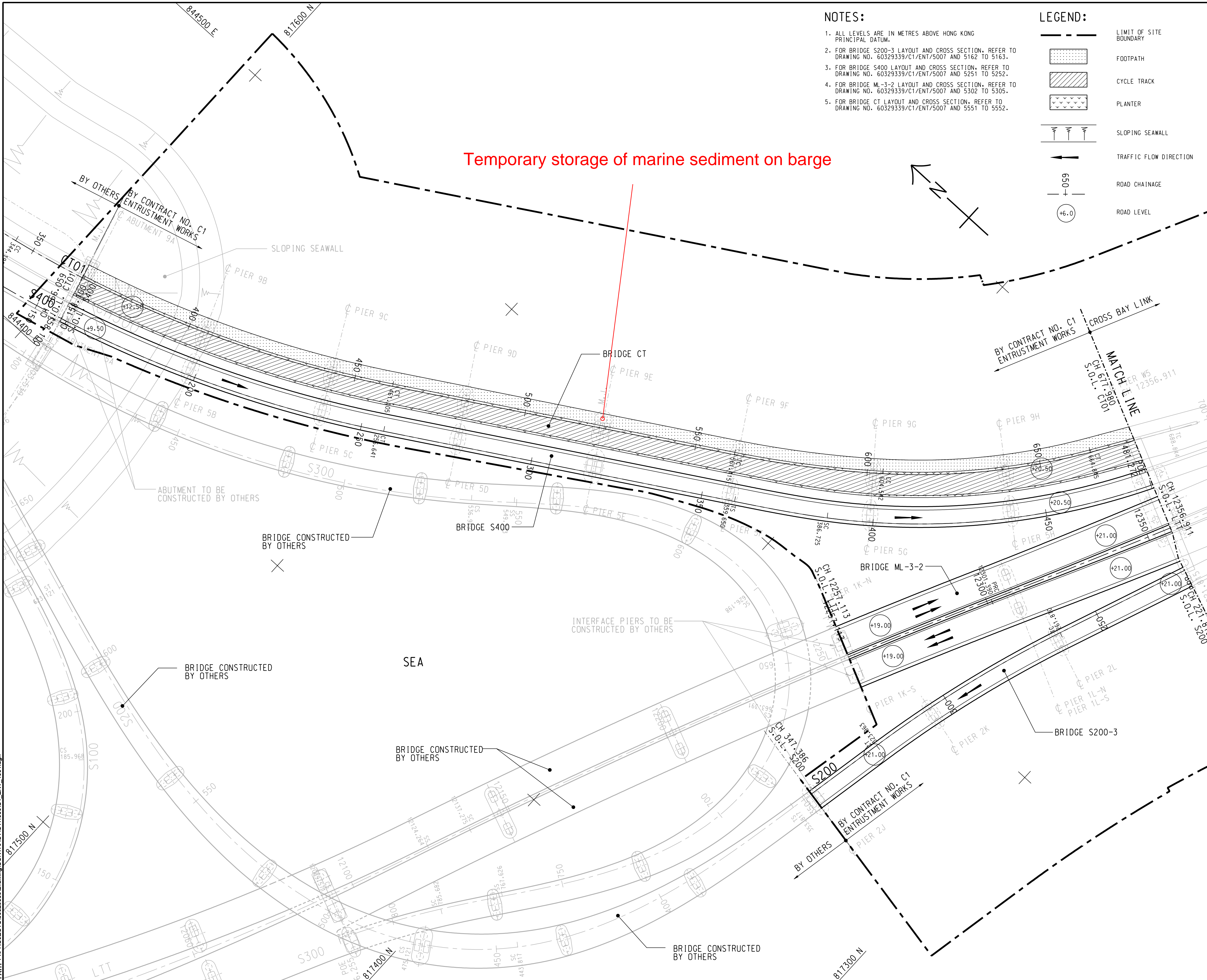
PROJECT NO.
 項目編號
 60329339

CONTRACT NO.
 合約編號
 NE/2017/07

SHEET TITLE
 圖紙名稱
 KEY PLAN AND LOCATION PLAN

SHEET NUMBER
 圖紙編號
 60329339/C1/C00/1000

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NOTES:

1. ALL LEVELS ARE IN METRES ABOVE HONG KONG PRINCIPAL DATUM.
2. FOR BRIDGE S200-3 LAYOUT AND CROSS SECTION, REFER TO DRAWING NO. 60329339/C1/ENT/5007 AND 5162 TO 5163.
3. FOR BRIDGE S400 LAYOUT AND CROSS SECTION, REFER TO DRAWING NO. 60329339/C1/ENT/5007 AND 5251 TO 5252.
4. FOR BRIDGE ML-3-2 LAYOUT AND CROSS SECTION, REFER TO DRAWING NO. 60329339/C1/ENT/5007 AND 5302 TO 5305.
5. FOR BRIDGE CT LAYOUT AND CROSS SECTION, REFER TO DRAWING NO. 60329339/C1/ENT/5007 AND 5551 TO 5552.

LEGEND:

- LIMIT OF SITE BOUNDARY
- FOOTPATH
- CYCLE TRACK
- PLANTER
- SLOPING SEAWALL
- TRAFFIC FLOW DIRECTION
- ROAD CHAINAGE
- ROAD LEVEL

Temporary storage of marine sediment on barge



PROJECT
 項目
**CROSS BAY LINK,
 TSEUNG KWAN O**

CONTRACT TITLE
 CROSS BAY LINK, TSEUNG KWAN O
 MAIN BRIDGE AND ASSOCIATED WORKS

CLIENT
 業主
 土木工程拓展署
 Civil Engineering and
 Development Department

CONSULTANT
 工程顧問公司
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SUB-CONSULTANTS
 分判工程顧問公司

ISSUE/REVISION

REV	DATE	DESCRIPTION	CHK.
-	DEC.17	TENDER DRAWING	RPCM

SCALE
 比例
 A1 : 500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號
 60329339

CONTRACT NO.
 合約編號
 NE/2017/07

SHEET TITLE
 圖紙名稱
 GENERAL LAYOUT

SHEET NUMBER
 圖紙編號
 60329339/C1/ENT/4001

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Appendix F
Summary Table for Work Processes or Activities requiring
timber for temporary work

Appendix 1.36

SUMMARY TABLE FOR USE OF TIMBER IN TEMPORARY WORKS

(PS CLAUSE 1.129)

Contract No.: NE/2017/07

Contract Title: Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works

Item No.	Description of Works Process or Activity [see note (a) below]	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m³)	Actual Quantities used (m³)	Remarks
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
Total Estimated Quantity of Timber Used					

- Notes: (a) The *Contractor* shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.
- (b) The summary table shall be submitted to the *Supervisor* monthly together with the Waste Flow Table for review and monitoring in accordance with PS clause 25.24(11).

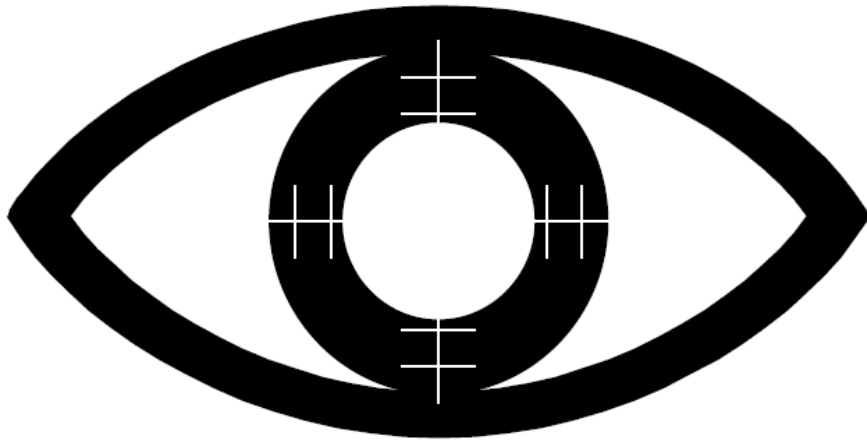


Appendix G

Notification of Video Recording System for Dump Trucks

注意

ATTENTION



此處有錄影監視系統

Surveillance Recording System in use

在本地盤設置的閉路電視系統會收錄影像作保安及管理用途，所收錄的資料將會依照個人資料(私隱)條例的規定處理。

The CCTV system installed in this Site will record video images for security and site management purposes. The recorded data will be processed in accordance with Personal Data (Privacy) Ordinance.



Appendix H

Sample of Weekly Environmental Walk Inspection Report



Weekly Environmental Walk Inspection Report
Summary of Follow-up Actions

Part I:

Contract No.: _____ Contract Title: _____

Date of Inspection: _____ Time _____
:

Person(s) making the inspection: _____

<u>Name in Block Letters</u>	<u>Designation</u>	<u>Organization</u>	<u>Signature</u>
1. _____	_____	_____	_____
2. _____	_____	_____	_____

Item no.	Location	Situation Requiring Follow-up Action	Agreed Due Date for Completion	Date Completed	Remarks

To be signed at the end of inspection:

The Contractor's performance on nuisance abatement and waste management *is/is not to the satisfaction of Project Manager/Supervisor or his representative at the time of inspection.

(* delete as appropriate)

Project Manager/Supervisor: _____

Contractor's Agent (or his representative) _____

Part II: (To be countersigned after **ALL actions** are completed)

Environmental Officer: _____

Project Manager/Supervisor: _____

Date: _____

Date: _____

(Note: No payment will be made for the item of "Weekly Environmental Walk" under the PFSES if the Contractor's site environmental and waste management performance is not satisfactory, or any one of the follow up actions is not completed on or before the "Agreed Due Date for Completion")



Appendix I

Summary Table of Alternative Disposal Grounds

Contract No. NE/2017/07
Cross Bay Link, TKO- Main Bridge, Associated Works

Summary Table of Approved Alternative Disposal Ground (update to MM/YY)

Item No.	Date of Approval	PM's Approval Letter ref. (xxxxxxxxxxxxxxxx)	Detail of Alternative Disposal Ground		
			Contract No.	Project Title	Contractor
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					



Appendix J Implementation Schedule for WMP

S9.5.2	<p><u>Waste Management Plan</u> A Waste Management Plan should be prepared and submitted to the Engineer for approval.</p>	To ensure proper management of C&D material	All construction sites	Contractor	Construction stage, prior to the commencement of the construction works	<ul style="list-style-type: none"> • ETWB TCW No. 19/2005
S9.5.3	<p><u>Good Site Practices</u> Recommendations for good site practices:</p> <ul style="list-style-type: none"> • nomination of an approved personnel to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site; • training of site personnel in proper waste management and chemical handling procedures; • provision of sufficient waste disposal points and regular collection for disposal; • separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre; • regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and • implementation of a recording system for the amount of wastes generated/recycled 	Good site practices which ensure waste generated during construction phase is properly managed	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005

	and disposal sites.					
S9.5.4	<p><u>Waste Reduction Measures</u></p> <p>Recommendations for achieving waste reduction include:</p> <ul style="list-style-type: none"> • on-site reuse of any material excavated as far as practicable; • segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of material and their proper disposal; • collection of aluminium cans and waste paper by individual collectors during construction should be encouraged. Separately labelled recycling bins should also be provided to segregate these wastes from other general refuse by the workforce; • recycling of any unused chemicals and those with remaining functional capacity as far as possible; • prevention of the potential damage or contamination to the construction materials through proper storage and good site practices; • planning and stocking of construction materials should be made carefully to minimise amount of waste generated avoid unnecessary generation of waste; 	To reduce amount of waste generated during construction phase	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005

	<p>and</p> <ul style="list-style-type: none"> • training on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling should be provided to workers. 					
S9.5.5-6	<p><u>Storage, Collection and Transportation of Waste</u></p> <p>Recommendations for proper storage include:</p> <ul style="list-style-type: none"> • waste such as soil should be handled and stored well to ensure secure containment; • stockpiling area should be provided with covers and water spraying system to prevent materials from being washed away and to reduce wind-blown litter; and • different locations should be designated to stockpile each material to enhance reuse. <p>With respect to the collection and transportation of waste from the construction works, the following is recommended:</p> <ul style="list-style-type: none"> • remove waste in a timely manner • employ trucks with cover or enclosed containers for waste transportations; 	To reduce the environmental implications of improper storage	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • Waste Disposal Ordinance (Cap. 54); • ETWB TCW No. 19/2005

	<ul style="list-style-type: none"> • obtain relevant waste disposal permits from the appropriate authorities; and disposal of waste should be done at licensed waste disposal facilities. 					
S9.5.8-11	<p><u>C&D Materials</u> The following mitigation measures shall be implemented in handling the waste:</p> <ul style="list-style-type: none"> • maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and • implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified; • disposal of the C&D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation; • Standard formwork or pre-fabrication should be used as far as practicable in 	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • Waste Disposal Ordinance (Cap.54); • ETWB TCW No. 19/2005; • ETWB TCW No. 06/2010

	<p>order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Metal hoarding should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage; and</p> <ul style="list-style-type: none"> • The Contractor should recycle as much of the C&D materials as possible on-site. Public fill and C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage. 					
S9.5.13	<p><u>Excavated Marine Sediments</u> During transportation and disposal of the excavated marine sediments, the following measures shall be taken to minimise potential environmental impacts:</p> <ul style="list-style-type: none"> • bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and 	To minimise potential impacts on water quality	All construction sites where applicable	Contractor	Construction stage	<ul style="list-style-type: none"> • ETWBTC (Works) No. 34/2002

	<p>exposed fittings of barges and hopper dredgers before the vessel is moved;</p> <ul style="list-style-type: none"> • monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation; • transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the DEP; and • barges should not be filled to a level that would cause the overflow of materials or sediment-laden water during loading or transportation. 					
S9.5.14-17	<p><u>Chemical Waste</u> For those processes which generate chemical waste, the Contractor shall identify any alternatives that generate reduced quantities or even no chemical waste, or less dangerous types of chemical waste.</p> <p>If chemical waste is produced at the construction site, the Contractor is required to register with EPD as chemical waste producers. Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows. Containers used for storage of chemical wastes shall:</p> <ul style="list-style-type: none"> • be suitable for the substance they are 	To ensure proper management of chemical waste	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • Waste Disposal (Chemical Waste) (General) Regulation; • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste

	<p>holding, resistant to corrosion, maintained in a good condition, and securely closed;</p> <ul style="list-style-type: none"> • have a capacity of less than 450 L unless the specification have been approved by EPD; and • display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. <p>The storage area for chemical wastes shall:</p> <ul style="list-style-type: none"> • be clearly labelled and used solely for the storage of chemical wastes; • be enclosed on at least 3 sides; • have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest; • have adequate ventilation; • be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste, if necessary); and • be arranged so that incompatible materials are adequately separated. <p>Disposal of chemical waste shall:</p>					
--	---	--	--	--	--	--

**ANNEX 2
REVISED SILT CURTAIN
DEPLOYMENT PLAN (REVISION 4,
UNDER CONTRACTOR NE/2017/17)**



Civil Engineering and Development Department
East Development Office
8/F, South Tower, West Kowloon Government Offices
11 Hoi Ting Road
Yau Ma Tei
Kowloon

Your reference:

Our reference: HKCEDD08/50/107695

Date: 13 December 2021

Attention: Mr Lo Sai Park, Sunny

BY FAX & POST
(Fax no.: 2739 0076)

Dear Sirs

Agreement No.: NTE 06/2016
Independent Environmental Checker for Tseung Kwan O – Lam Tin Tunnel
Silt Curtain Deployment Plan for Main Bridge and Associated Works (Rev. 4)

We refer to email of 7 December 2021 from China Road and Bridge Corporation attaching the Silt Curtain Deployment Plan (Revision No. 4) for Entrustment Works under CBL.

We have no comment and hereby verify the captioned submission in accordance with Clause 2.8 of the Environmental Permit no. EP-458/2013/C.

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Edric Lau at 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LCCR/LTKE/lsmt

cc AECOM – Mr Kingman Chan (email: kingman.chan@cbl1-aecom.com)
Cinotech – Mr H F Chan (email: hf.chan@cinotech.com.hk)
CRBC – Mr Calvin So (email: calvin.so@crbc.com.hk)

Our Ref: MA16034/Corres/Out/my211203

Civil Engineering and Development Department

East Development Office
East Division 1
Project Division (1)
8/F, South Tower, West Kowloon Government Offices,
11 Hoi Ting Road,
Yau Ma Tei, Kowloon

By E-Mail
3rd December 2021

Attn: Mr. LO Sai Park, Sunny

Dear Mr. Lo,

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel - Design and Construction
(Environmental Permit (EP) No. EP-458/2013/C)
Contract No. NE/2017/07 – Silt Curtain Deployment Plan (Rev. 4)

We refer to the Silt Curtain Deployment Plan (Revision 4) submitted by China Road and Bridge Corporation on 16th April 2021 via email.

We are pleased to inform you that we have no further comment on your plan with reference to the approved Silt Curtain Deployment Plan (Rev. 4).

Should you have any queries, please contact our Ms. Karina Chan at 2151 3880 or the undersigned at 2151 2083.

Yours faithfully,

For and on behalf of
Cinotech Consultants Limited



Dr. H.F Chan
Environmental Team Leader

c.c. AECOM
ANewR
CRBC

Mr. King-man Chan
Mr. James Choi
Mr. Calvin So

By E-mail
By E-mail
By E-mail



Contract No:

NE/2017/07

Project Title:

Cross Bay Link, Tseung Kwan O,
Main Bridge and Associated Works

Silt Curtain Deployment Plan

Document No:

Revision: 4

Date: 24 March 2021

Prepared by:

Calvin So
Environmental Officer

Endorsed by:

Raymond Suen
Site Agent



Content

1.0	General	4
1.1	Objective	4
1.2	Construction Plants	4
2.0	Scope of Works and Construction Programme	5
3.0	Silt Curtain Design	5
4.0	Silt Curtain Installation	6
5.0	Silt Curtain Maintenance	7
6.0	Silt Curtain Removal/ Repositioning	8

Appendices

Appendix A – Tentative Programme for Major Marine Works

Appendix B – Typical Details of Proposed Silt Curtain

Appendix C – Specification of Geotextile of Silt Curtain

Appendix D – Silt Curtain Inspection Checklist

Appendix E – Site Layout

Appendix F – Environmental Mitigation Implementation Schedule

Appendix G – Discharge License WT00032842-2018



1.0 General

1.1 Objective

Prior to the commencement of marine works as well as the whole construction period with marine works in the sea under Contract No. NE/2017/07, China Road and Bridge Corporation (CRBC) will be responsible for the installation, operation and maintenance of the silt curtain. The silt curtain act as a measure to maintain the water quality in the vicinity of the marine works. CRBC will also be responsible to remove the aforementioned silt curtain after the completion of the works.

This deployment plan describes in detail the design, method of installation, operation and maintenance of the proposed silt curtain.

The silt curtain deployment plan shall also comply with the following reference Specifications and Drawings:

- General Specification Sections 21 and 25
- Particular Specification Sections 21 and 25
- Environmental Permit (EP No. EP-458/2013/C) Condition 2.8
- Working Drawings Nos. 60329339/C1/C00/1000A, 1015, 1021B, 1101

1.2 Construction Plants

Plant and equipment to be used for the proposed silt curtain deployment include, but not limited to, the followings:

- Split Hopper 1 no.
- Derrick Lighter 1 no.
- Grab Dredger 1 no.

Adequate resources shall be deployed to suit the construction programme.

2.0 Scope of Works and Construction Programme

The works to be executed under this contract involves construction of Tseung Kwan O Interchange and Associated Works.

- Construction of marine viaducts forming the Tseung Kwan O Interchange at Junk Bay;
- Construction of 5 bridges and 17 pile caps and approx. 35 piles

In general, silt curtain will be deployed during all the marine works. A brief programmes showing the tentative commencement and completion dates of the major marine works are enclosed in **Appendix A**.

3.0 Silt Curtain Design

General type silt curtain consists of a layer of geotextile mounted on the temporary working platform and extended to the seabed level secured by steel chain ballast. The silt curtain will surround the platform by tying the silt curtain to the railing of the platform. The panels can be assembled and connected by rope through a series of grommet. In between overlap sits the winching rope to adjust curtain depth whenever necessary.

Regarding the conditions of the discharge licence (WT00032842-2018) (**Appendix G**), all the construction wastewater should be treated before discharge.

For the bore pile construction stage, wastewater will be generated during the drilling and piling works. The wastewater will be treated by wastewater treatment facilities and discharged within silt curtain. The silt curtain will be deployed by surrounding the temporary platform as shown in **Appendix B**.

For the pile cap construction stage, ingress seawater will be pumped out from the precast pile cap shell to provide a dry condition for concreting. The wastewater will be treated by wastewater treatment facilities and discharged within silt curtain.

As for preventive measure against dropping of fresh concrete to the sea during the concreting stage at the shell, tarpaulin sheets will be provided between the barge and the shell to prevent the contamination to the seawater.

Woven geotextile will be used as the curtain fabric, heavy duty geotextile which is strong and has small pore size which consider suitable for such work. Reinforcement can be

incorporated in the curtain body for strength and stiffness. Shackles will be placed as option at the reinforcement to strengthen panel connection.

Sufficient length of geotextile shall be allowed such that the silt curtain can be extended from the water surface to the seabed during high tide condition. The typical section of the proposed silt curtain is attached in **Appendix B** and the location of silt curtain is indicated in site layout attached in **Appendix E**.

Product catalogue with specification and job reference of the proposed geotextile for the silt curtain is attached in **Appendix C**.

4.0 Silt Curtain Installation

CRBC will install the silt curtain as stated below:

1. Prepare the geotextile with size suitable for the specific platform size on the Derrick Lighter or Barge.
2. Tie the top end of the geotextile and connected to the reinforced belt, the bottom end with the steel chain ballast.
3. Row up the top part of the silt curtain to the specific length suitable for the lift up distance of the Derrick Lighter.
4. Lift the silt curtain up and place it above the temporary platform, make sure the bottom part of the silt curtain is surrounding the platform.
5. Lift down the silt curtain with steel chain ballast into sea and sit on seabed.
6. Workers with life jacket then tie the geotextile with the temporary platform by steel plate.

In order to maintain the position of the silt curtain especially at location with strong current, spot check by workers will be carried out for each silt curtain before and after works every day.

CRBC will also conduct and submit weekly inspection with the supervisor throughout the periods of marine piling and pile cap construction to the Project Manager or Supervisor to demonstrate that the silt curtains are in good working conditions. Diver inspection would be carried out once per every three months or if necessary such as after the adverse weather and any unforeseeable condition which might damage the silt curtain physical condition to ensure the bottom of the silt curtain is well placed on the seabed level and no damage of silt curtain under water.

5.0 Silt Curtain Maintenance

On-board supervisors will be assigned to check the condition of the silt curtain weekly before commencement of works. An inspection checklist will be prepared and filled in by the site supervisors. All checklists will be kept on site for record purpose. Refer **Appendix D** for the sample of Silt Curtain Inspection Checklist.

For the tentative arrangement of silt curtain under adverse weather, the silt curtain will be removed temporarily during adverse weather and related works will be suspended immediately until the silt curtain is installed again.

Refuse around the silt curtains will be collected at regular intervals on a daily basis so that water behind the silt curtains will be kept free from floating debris.

Sufficient spare geotextile will be kept on site for replacing of damaged silt curtains. The spare geotextile shall be kept in place to avoid direct contact with water and sunlight.

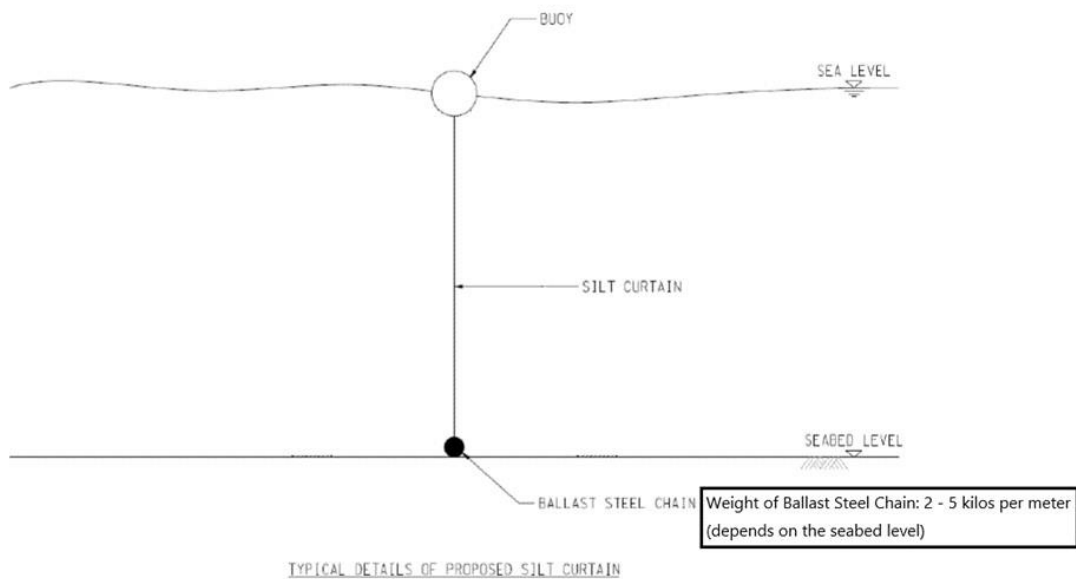


Figure 1 Typical details of proposed silt curtain



6.0 Silt Curtain Removal/ Repositioning

Removal of silt curtain shall be carried out by derrick lighter after completion of ground investigation and bored pile construction in order to reduce negative impact on water quality during ground investigation and bored pile construction. Actions upon repositioning of silt curtain will be same as deployment of a new silt curtain. The condition of the silt curtain will be jointly inspected with the Supervisor before relocation to the new position. CRBC will responsible to revise the SCDP if there is any amendments or changes from the original design in separate application.



Appendix A – Tentative Programme for Major Marine Works

Data Date: 08-Nov-20

Contract No. NE/2017/07 Cross Bay Link, Tseng Kwan O- Main Bridge and Associated Works

Activity ID	Activity Name	Duration	Start	Finish	Contract Start	Contract Finish	Month																																											
							1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3	3	3	4	4	4	4	4	4	4	4	5	5	5	5	5	5
ESP Section 1 of the Works- All Works within Portion I of the Site (Entrusted Works of TKOI Viaduct)		489	13-Jan-21	16-May-22	13-Jan-21	12-Feb-22																																												
ESP10720	Pre-drilling Works	71	13-Jan-21	24-Mar-21	13-Jan-21	15-May-21																																												
ESP10740	Piling Works	140	30-Jan-21	18-Jun-21	30-Jan-21	18-Jun-21																																												
ESP10760	Pile Cap Construction	110	13-Apr-21	31-Jul-21	15-Apr-21	31-Jul-21																																												
ESP10770	Pier head Segment Diaphragm Construction	137	27-May-21	10-Oct-21	27-May-21	10-Oct-21																																												
ESP10780	Pier Construction	157	06-May-21	09-Oct-21	06-May-21	09-Oct-21																																												
ESP10800	Erection of Bridge Segments for Bridge S400 & Bridge CT, Stitching and Movement Joint Installation	115	21-Jul-21	12-Nov-21	21-Jul-21	12-Nov-21																																												
ESP10820	Erection of Bridge Segments for Bridge ML3-2, Stitching and Movement Joint Installation	20	05-Nov-21	24-Nov-21	05-Nov-21	24-Nov-21																																												
ESP10840	Erection of Bridge Segments for Bridge S200-3, Stitching and Movement Joint Installation	40	31-Oct-21	09-Dec-21	31-Oct-21	09-Dec-21																																												
ESP10860	Installation of Parapet, Sign Gantry and Civil Provision Works for TCSS Installation	0	13-Jan-22	13-Jan-22	12-Jan-22	12-Jan-22																																												
ESP10870	Key Date 3-Completion of all Works in Bridges within Portion I of the Site necessary for installation and T&C of TCSS	0		13-Jan-22*		12-Jan-22																																												
ESP10880	Road Pavement, Road Lighting, Drainage Works and Remaining Works	76	29-Nov-21	12-Feb-22	29-Nov-21	12-Feb-22																																												
ESP10890	Key Date 4-Completion of all Works in Bridges within Portion I, II, III, IV and VI of the Site for opening of CBL	0		16-May-22*		12-Feb-22																																												
ESP10895	Completion of Section 1 of the Works- All Works within Portion I of the Site	0		12-Feb-22*		12-Feb-22																																												

◆ Key Date 3-Completion of all Works
◆ Key Date 4-Completion of all Works
◆ Completion of Section 1 of the Works

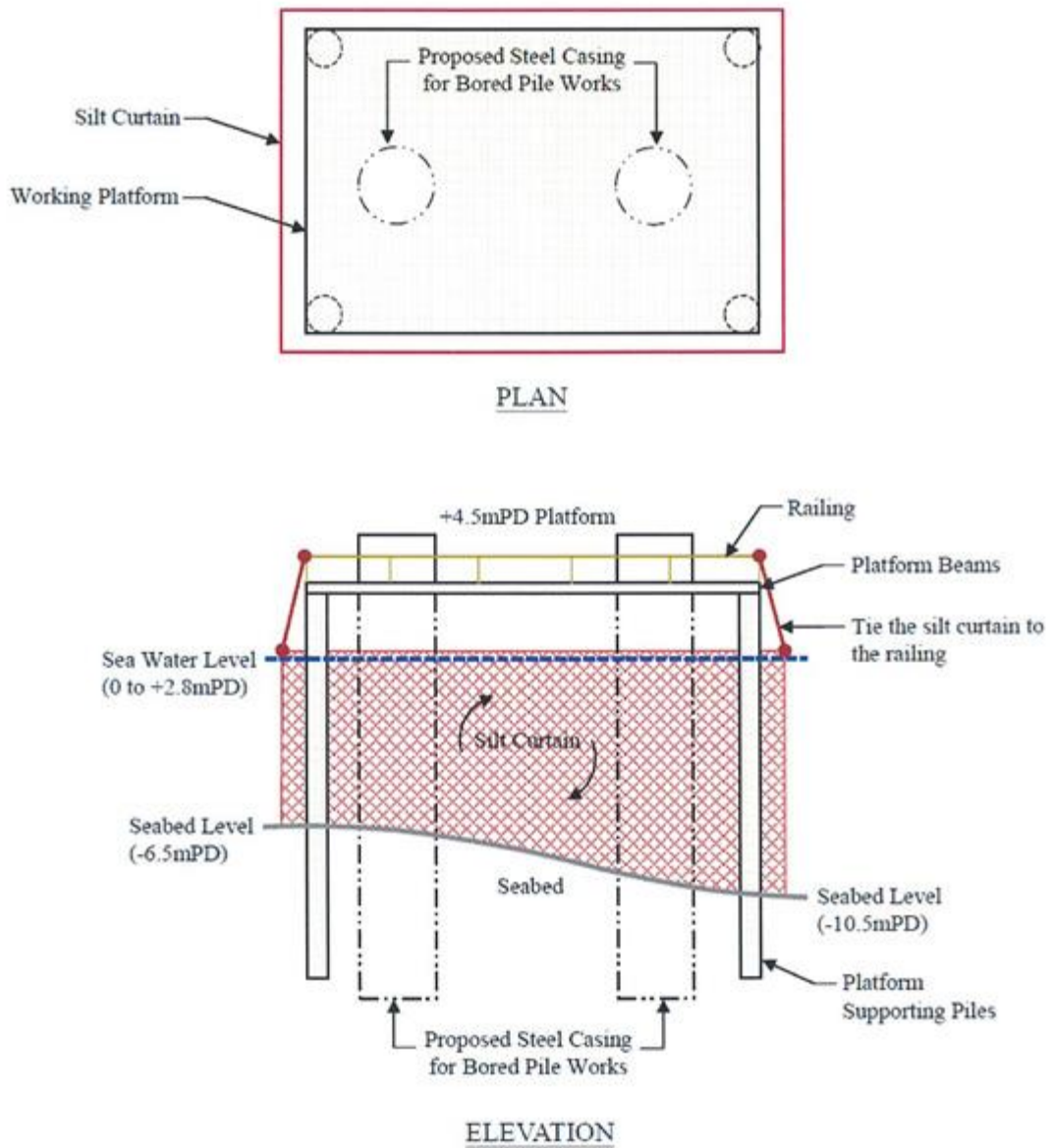


ESP Non-critical ◆ Milestone
ESP Section
ESP Critical

Executive Summary Programme
MPU 20201108
(sheet 1 of 1)



Appendix B – Typical Details of Proposed Silt Curtain





Appendix C – Specification of Geotextile for Silt Curtain

COMPANY INTRODUCTION



DAEYOUN GEOTECH

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- 2. Company History**
- 3. Factory Introduction**
- 4. Plant Investment Plan in the Future**
- 5. Manufacturing Process**
- 6. Main Buyer and Partnership with Construction Company**
- 7. Performance Experience in Vietnam & Overseas Market**
- 8. Certification**



COMPANY INFORMATION

Company Name	DAEYOUN GEOTECH CO., LTD
C.E.O	Mr. Sang Ki Lee
Establish	1991
Employee	35 people
Head office	No. 1121, Poonglim Bldg, Gongdeok-dong, Mapo-gu, Seoul, Korea
Main Business	PET/PP Woven Geotextiles Silt Protector / Curtain
Capacity	15 million sqm / year

GEONIA® Silt Protector DSP Technical Data Sheet
 High Performance Silt Protector (Floating Curtain)

www.egeonia.com
DSP15 (150/150)

Mechanical Properties	Test Method		Unit		Value
Physical Properties					
Tensile Strength	MD	ASTM D4595	kN/m	≥	150
Tensile Strength	CD	ASTM D4595	kN/m	≥	150
Elongation	MD	ASTM D4595	%	≤	15
Elongation	CD	ASTM D4595	%	≤	15
Rate of Contraction		ISO 7771	%	±	0.2
Hydraulic Properties					
Water flow rate (h:50mm)		ASTM D4491	l/m ² /sec (mm/sec)	≥	1.0
Water Permittivity (h:50mm)		ASTM D4491	sec ⁻¹	≥	0.02
Apparent Opening Size(O ₉₅)		ASTM D4751	mm	≤	0.075

Above data sheet is our standard properties for the reference usage. DAEYOUN GEOTECH will not be responsible caused by any discrepancy with above data sheet. Please contact us if you need specified data sheet.

GEONIA® is a registered trademark of DAEYOUN GEOTECH.
MADE IN KOREA



DSP METALIC PARTS METARIAL AND COATING

2014-12-24

ITEM	METARIAL	COATING
EYELET	STEEL (S20C)	PAINTING (oil based paint)
STEEL PLATE	STEEL (S20C)	GALVANIZED (50~80μm)
REINFORCED STEEL PLATE	STEEL (S20C)	HOT DIP GALVANIZE (over 80μm)
BOLT&NUT	STEEL (S20C)	GALVANIZED (50~80μm)
CHAIN	STEEL (S20C)	COAL TAR PAINTING

* Above materials and coating methods can be changed according to manufacturer's decision.

* Any kind of change will be noticed to buyer in advance when it occurred.



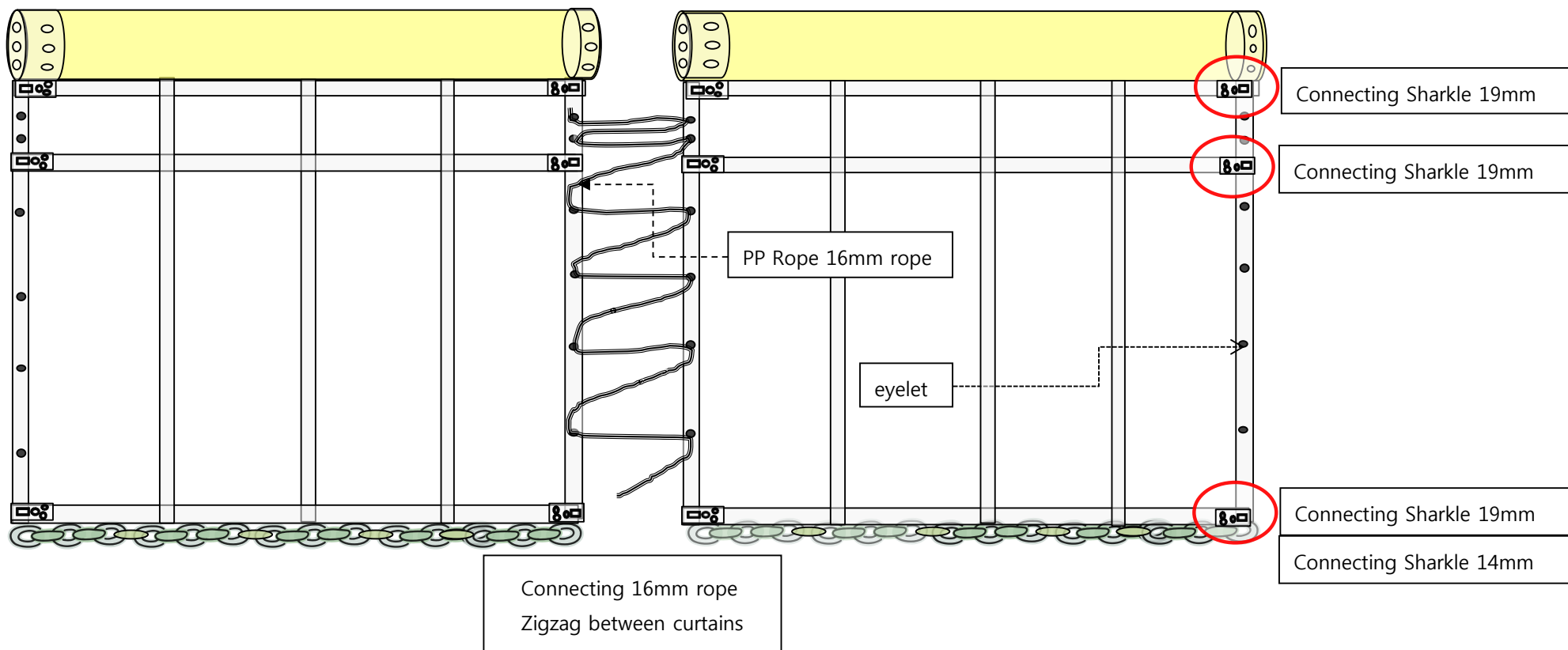
Silt Protector

Installation

Caution

Maintenance

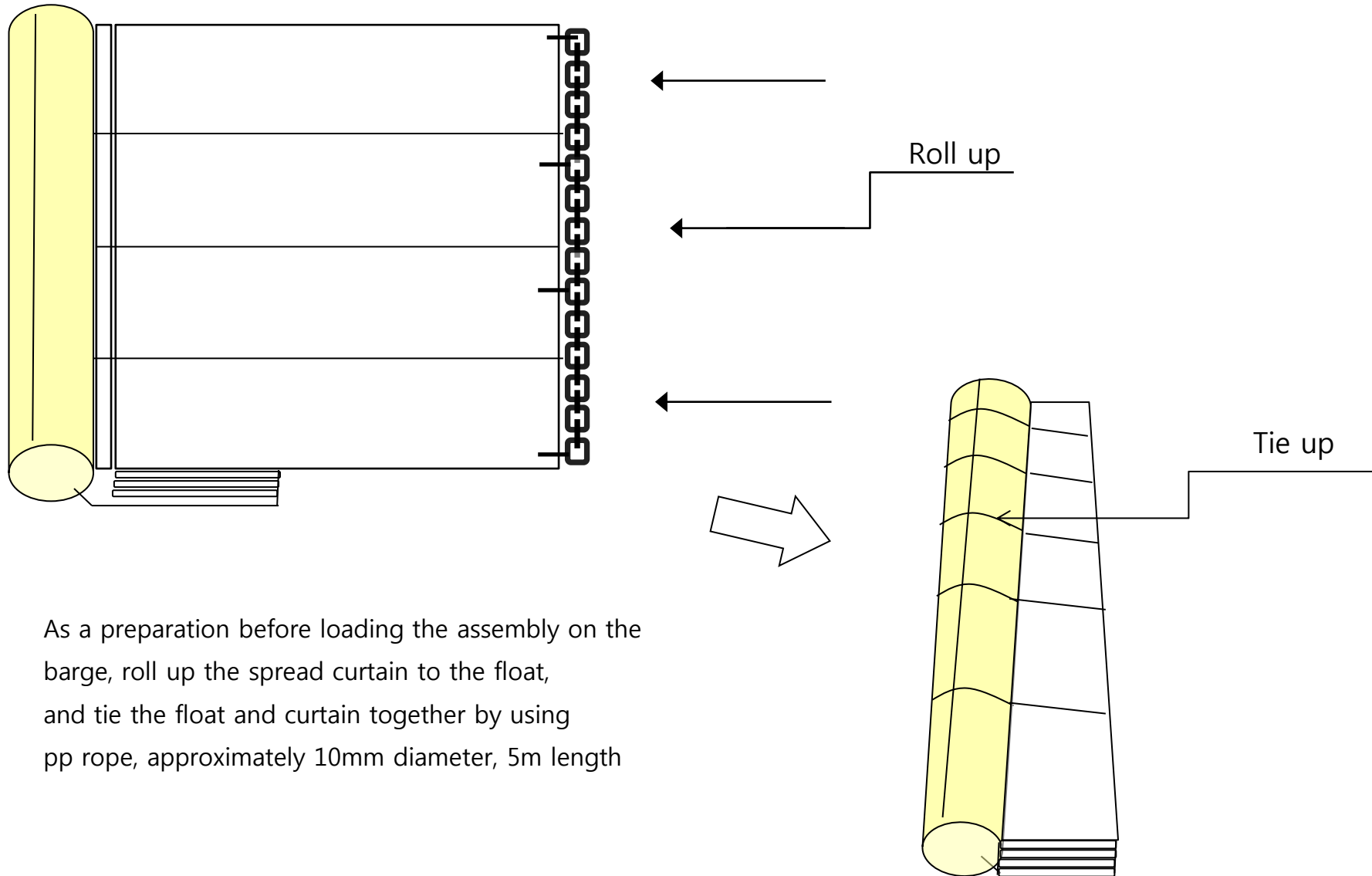
Installation Guide (Connecting curtain and curtain)



* Number of connections(between curtain and curtain)

	19mm sharkle	No. of eyelet
2m height of curtain	3	6
3m height of curtain	4	9
4m height of curtain	4	12
5m height of curtain	5	15
6m height of curtain	5	18

Installation Guide (Temporary tying curtains)



As a preparation before loading the assembly on the barge, roll up the spread curtain to the float, and tie the float and curtain together by using pp rope, approximately 10mm diameter, 5m length

Caution

Caution

Designate a person who is in charge of management of the Silt Protector.

If an environment that exceeds the design conditions is estimated, remove the Silt Protector immediately, or the unit may be damaged. If the Silt Protector requires a repair, take necessary actions soon. If it is left without being repaired, the function of the unit may be affected adversely or the damage may expand so that it cannot be repaired.

If the Silt Protector has been dislocated from the proper position or the layout has been deformed, restore it to original position or formation immediately. Otherwise, serious accident may be caused.

Be careful not to damage the float and curtain when removing sea shells and plants from these components. The float is made of Styrofoam which is inflammable. Keep fire away from this component.

Preconditions for maintenance

Check the Silt Protector periodically, and any component that have been deteriorated due to aging must be repaired or replaced with new component.

Maintenance 1

Maintenance

Daily inspection

The Silt Protector should be visually monitored by patrol during the period it is placed in the water. The patrol is performed on the boat for the purpose of preventing ships from running against the unit and of finding abnormality in earlier phase. (once per day)

Caution: In case the Silt Protector has a serious trouble, Failure to do the daily check may cause serious trouble in addition to the loss of its normal pollution protection performance.

Periodic inspection

In addition to visual inspection on the boat, periodically dive to check the unit thoroughly. (Once per every three months)

Caution: In case the Silt Protector has been damaged, failure to do the periodical check may cause the loss of its normal pollution protection performance and a damage that cannot be repaired to occur.

Extra inspection

After typhoon or other abnormal weather, check the unit for the purpose of finding possible damages or troubles earlier. This check is performed basically on the boat, but dive to check the unit if necessary.

Caution: In case the Silt Protector has been seriously damaged, failure to do the extra check may cause the loss of its normal pollution protection performance and a damage that cannot be repaired to occur.

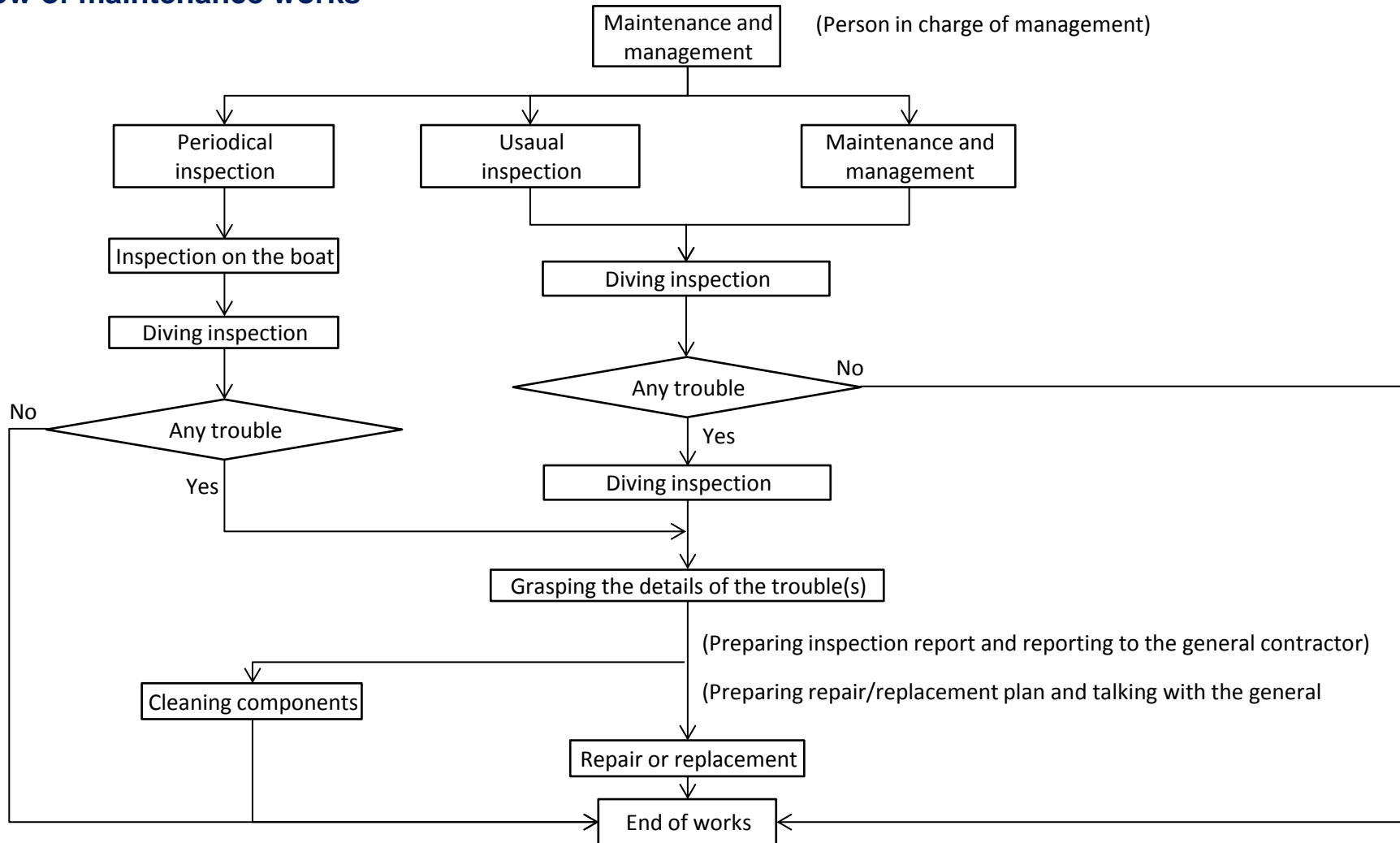
Sea shell removal

If it is found that the freeboard of the float is less than 1/2 of its diameter due to increase of the total weight with the growth of sea shells and plants on the float and curtain, dive to clean these components. It is recommended to monitor the change of the freeboard of the float. Check it at the periodical inspection, and record the growth of the sea organisms. (perform these works as necessary.)

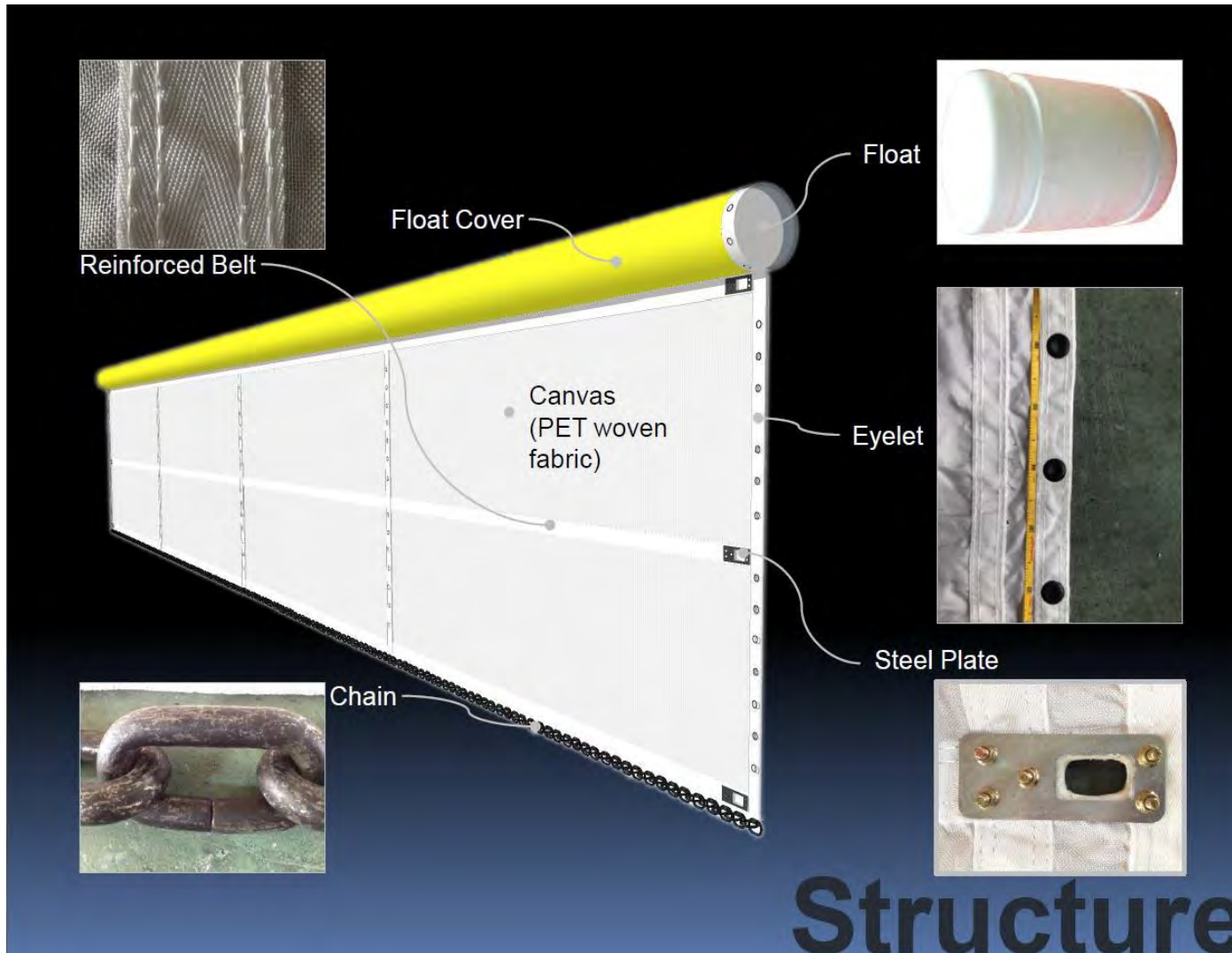
Caution: Failure to do the cleaning may increase the weight of the Silt Protector resulting in sinking it to cause loss of the function. Be careful not to damage the Silt Protector when cleaning the unit.

Maintenance 2

Flow of maintenance works



Parts



Project list of Silt Protector

We, Daeyoun Geotech, hereby certify that the following are our main project list in **Vietnam**.

Name of Project	Contract Amount (USD)	Month/Year	Span
NSRP Project	300,000	Sep. 2013	150 spans
Lach Huyen Project	100,000	Sep. 2013	100 spans
Total	400,000	-	250 spans

We, Daeyoun Geotech, hereby certify that the following are our main project list in **Korea**.

Name of Project	Contract Amount (USD)	Month/Year	Span
Gamcheon Port (International Fish Market) Construction	160,000	Nov. 2013	267 spans
Boryeong-Taeon 2 Sector	210,000	Oct. 2013	350 spans
Heaundae Beach	432,000	May. 2013	720 spans
Dangjin Thermal Power Plant Construction	450,000	Aug. 2013	750 spans
Incheon Port International Passenger Wharf Construction	10,000	Sep. 2012	17 spans
Pusan New Port Second (2-5 Step)	10,000	Sep. 2012	17 spans
Galsa Bay Shipbuilding Industry Construction	100,000	Aug. 2012	167 spans
Mokpo South-Port Government Ships Pier Construction	50,000	Aug. 2012	83 spans
Aewol Port Step 2	10,000	Jul. 2012	17 spans
Port Mooring Facilities Construction	15,000	Mar. 2012	25 spans
Gogyunsan 3 Sector	10,000	Jan. 2012	17 spans
Gwangyang Drainage Construction	15,000	Jan. 2012	25 spans
Sinma Port Construction	25,000	Jul. 2011	42 spans
Ulsan New Port Construction	12,000	Jul. 2011	20 spans
Gwangyang Plant Expansion Construction	20,000	May. 2011	33 spans
Yeosu Oil Tank Construction	10,000	Apr. 2011	17 spans
Samcheong Green Power Construction	13,000	Feb. 2011	22 spans
Pusan Port Coast Guard Pier Construction	10,000	Feb. 2011	17 spans
Jeongoghang Aquarium Relocation	10,000	Feb. 2011	17 spans
Dangjin Thermal Power Plant Construction	15,000	Feb. 2011	25 spans
Kyungin-Ara Waterway Construction	12,000	Feb. 2011	20 spans
Seogmun 5 Sector	10,000	Jan. 2010	17 spans
Daewoo Tongyeong LNG Construction	20,000	Sep. 2009	33 spans
Total	1,629,000	-	2715 spans

SILT PROTECTOR PROJECT LIST (OVERSEAS)

We, Daeyoun Geotech, hereby certify that the following are our main overseas project list in overseas

Name of Project	Nation	Contract (USD)	Month/Year
Pinang Island Reclamation Project	Malaysia	11,585	MAR. 2016
Tsuen Wan West Station, TW-6 Property Development	HongKong	898	AUG. 2015
Replacement and rehaulitaion of water mains at Peng Chau	HongKong	3,016	MAR. 2015
Deep vemet Mixing Trial Works	HongKong	10,186	MAR. 2015
Dual 2-lane carriageway between HZMB BCF and North Lantsu Highway	HongKong	20,306	APR. 2014
Catbi airport	VIETNAM	300,000	DEC. 2013
Congio Island development	VIETNAM	100,000	DEC. 2013
Congio Island development	VIETNAM	100,000	DEC. 2013
Pomosa Posco	VIETNAM	300,000	DEC. 2013
Hanoi-Haiphong pkg7 GS	VIETNAM	500,000	DEC. 2013
Pomosa Hathin Steel	VIETNAM	200,000	DEC. 2013
Camau Road & etc	VIETNAM	1,500,000	DEC. 2013
The Sothern Coastal Corridor-Minh Luong project	VIETNAM	730,000	DEC. 2012
Siltprotect(NSRP Project)	VIETNAM	300,000	SEP. 2013
Siltprotect(Lach Huyen Project)	VIETNAM	100,000	SEP. 2013
The Sothern Coastal Corridor-Kenh 14 Bridge	VIETNAM	100,000	NOV. 2012
Rach Gia Giang Bypass Project	VIETNAM	250,000	NOV. 2012
Hanoi-Haiphong Express Way 5 Sector	VIETNAM	500,000	AUG. 2012
Hanoi-Haiphong Express Way 4 Sector	VIETNAM	1,000,000	MAR. 2012
Hanoi-Haiphong Express Way 6 Sector	VIETNAM	520,000	MAR. 2012
Hanoi-Haiphong Express Way 2 Sector	VIETNAM	520,000	OCT. 2011
Hanoi-Haiphong Express Way 10 Sector	VIETNAM	520,000	SEP. 2011
Hanoi-Haiphong Express Way 3 Sector	VIETNAM	600,000	SEP. 2011
Hanoi-Haiphong Express Way 8 Sector	VIETNAM	600,000	SEP. 2011
Hanoi-Haiphong Express Way 7 Sector	VIETNAM	615,000	APR. 2011
Hochiminh TBO Project	VIETNAM	50,000	APR. 2011
Posco port for steel process factory in Phu My	VIETNAM	150,000	APR. 2010
National way Hochiminh~Trung Luong project	VIETNAM	200,000	FEB. 2010
Caimep Industrial Park	VIETNAM	200,000	JUN. 2010
National way No. 61B project	VIETNAM	200,000	JUN. 2010
National way No.51 project	VIETNAM	300,000	JUN. 2009
Hanoi-Hochiminh Express Way Caugie-Ninh binh project	VIETNAM	400,000	JAN. 2008
Hanoi Than Tri Bridge	VIETNAM	300,000	JAN. 2008



Daeyoun Geotextile Silt Protector

Date	Project	Client	Consultant	Model	Size (W x Lm)	No. of Span
Jul-03	CV/2002/04 Penny's Bay Reclamation Stage 2	Gammon Construction Ltd	Scott Wilson Ltd		5 x 20m 5 x 10m	86 256
May-13	DC/2011/01 Drainage Maintenance and Construction in Mainland South Districts (2011-2015)	World Diamond Engineering Ltd	Drainage Services Department	GSP 15	5x20m 3x5m 3x2m 3x13m	1 10 1 4
Apr-14	HY/2012/07 Dual 2-lane carriageway between HZMB BCF and North Lantau Highway	Gammon Construction Ltd	AECOM Asia Co Ltd	DSP15	6 x 20 7 x 20 9 x 20	24 10 10
Mar-15	16/WSD/11 Replacement and rehabilitation of water mains at Peng Chau, Sunshine Island and Hei Ling Chau	Pipe Tech Ltd MIRDTEC HK Ltd	AECOM Asia Co Ltd	DSP 15 DSP 15 DSP 15	0.6 x 20 1.2 x 20 1.5 x 20	1 22 6
Mar-15	P552 Deep Cement Mixing Trial Works	Penta Ocean Construction Co	Atkins	DSP30 DSP30	8 x 20 8 x 25	2 6
Aug-15	Tsuen Wan West Station, TW-6 Property Development	Hip Hing Construction Co Ltd	Mannars Chan & Associates	DSP15	4 x 20	1
Dec-15	HK/2012/08 Wan Chai Development Phase II - Central Wan Chai Bypass at Wan Chai West	China State - Leader JV	AECOM Asia Co. Ltd	DSP30 DSP30 DSP15 DSP15 DSP15	10 x 20 5 x 10 10 x 20 9 x 20 8 x 20	6 6 5 5 5
Mar-16	Asia Pacific Gateway (APG) - Tseung Kwan O (Cape Collinson)	Maritime Mechanic Ltd	Environmental Resources Management	DSP15	14 x 12	20
Nov-16	Dredging works at Marina Cove	Fung Kau Kee Contractors Ltd		DSP15	5 x 20	2
Nov-16	HY/2012/08 Tuen Mun - Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section	Crown Asia Engineering Ltd Dragages - Bouygues JV	AECOM Asia Co. Ltd	DSP15	8 x 20 9 x 20 10 x 20 Marker Buoy Dia: 520mm	5 5 5 12 nos.
Dec-16	C3203 3rd Runway System Project DCM Ground Improvement Works (Package 3)	Sambo E & C Co Ltd	Airport Authority	DSP 30 Barge Type	4 x 10 2 x 10 4 x 9 1.6 x 9 2.8 x 9 1.8 x 9 2 x 9	46 2 246 4 2 2 2
Dec-16	C3204 3rd Runway System Project DCM Ground Improvement Works (Package 4)	CRBC-Sambo JV	Airport Authority	DSP30	6 x 5.3 6 x 11.3 6 x 12.3 6 x 12.8 6 x 13.8 6 x 6	2 2 20 4 4 30
Jan-17	C3201 3rd Runway System Project DCM Ground Improvement Works (Package 1)	Penta Ocean-China State- Dong Ah JV	Airport Authority	DSP 30	6 x 8	134
Feb-17	P560 Aviation Fuel Pipeline Diversion Works	Kat Yue Construction Engineering Ltd	Airport Authority	DSP15	1.5 x 20	8
Apr-17	HKHA20120023 Public rental housing, Shek Mun Estate	Hin Sum Engineering Co Ltd	Housing Authority	DSP / SG110	3 x 20	2
Jun-17	C3204 3rd Runway System Project DCM Ground Improvement Works (Package 4)	CRBC - Sambo JV	Airport Authority	DSP30	6 x 6	50
Jul-17	Refuse Boom at Tai O by World Wide Fund	G and E Co Ltd		DSP15	0.5 x 20	3
Aug-17	Lyric Theater Complex and Extended Basement Project for the WKCD Authority	Gammon Construction Ltd	AECOM Asia Co. Ltd / Mott Macdonald HK	DSP15	8 x 20	6

Prototype Sample



Tube Type



Coverhead Type





G AND E COMPANY LIMITED

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Fax: 2570 0089

website: www.g-and-e.com

G and E – a Perspective

G and E, founded in 1984, is a geosynthetics specialist who distributes a wide variety of geosynthetics from a list of renowned global manufacturers. The Company also manages a competent installation contracting service. To better serve our clients, design and engineering service have also been established in our portfolio. We aspire to provide our client comprehensive engineering solutions, from technical application and design, the supply of materials and their installation, to the conformance testing and project commissioning.

G and E takes a strong vision on geosynthetics application and development by working closely with international consultants, academics, professional organizations, research institutions, testing laboratories and renowned manufacturers, a mission to broaden the versatility of geosynthetics and its innovation.



Our vast product range covers:

Geotextile, geomembrane, geodrain, geocomposite, geogrid, geocell, band drain, erosion control systems, geosynthetic clay liner, rockfall barrier, gabion, geofoam, silt curtain, concrete mattress and geotextile container, extending a very wide scope of application in most civil, geotechnical and marine engineering.

We offer our clients:

- Extensive product knowledge and installation method statement
- Comprehensive services, application, design, contracting and commissioning
- Highly attentive and superior professional work
- Superb quality products at competitive price



G and E is ISO9001:2008 quality management certified, and a VSRS registered subcontractor. G and E has a remarkably successful working relationship with a long list of clients, the Government, project owners, contractors, designers, consultant engineers, overseas distributors and trading partners. The clientele extends to Macau, Southeast Asia and Southern China.

Talk to us today and see how we can work together for cost-effective and time saving solutions. We are stepping into our 32nd year in the field and have valuable experience to share with you.

ISO9001:2008

International Geosynthetics
Society

Product Endorsement

A Registered Subcontractor



G and E is a distribution network and sourcing agent of geosynthetics, as well as a provider of professional design and installation services.



Central – Wan Chai Bypass - seawall separation using heavy non-woven geotextile Bontec SNW120

The company handles a comprehensive range of geosynthetic materials:

<u>GEOTEXTILE:</u>	PP, PET woven, non-woven, thermal bonded, needle punched, spun bond, special weave & composite
<u>GEOMEMBRANE:</u>	HDPE, LLDPE, PVC, keyed preformed, tunnel lining, concrete protection liner, gas barrier, basement waterproofing, leakage collection & effluent containment
<u>GEODRAIN:</u>	Geonet, geocomposite, band drain, sheet drain & roof drain
<u>GEOGRID:</u>	HDPE, PET, PP for reinforced slope and wall, MSEW, stabilization geogrid, special composite
<u>EROSION CONTROL:</u>	Erosion mat, concrete mat, coir mat, geocell, gabion, rockfall mesh, flexible rockfall fence
<u>MARINE ENGINEERING:</u>	Silt curtain, turbidity control, block mat, geotextile tube, trash boom, geotextile container
<u>GCL:</u>	Geosynthetic clay liner, bentonite liner and composite
<u>HDPE PIPE:</u>	Sewer pipe, dual wall pipe, submarine outfall
<u>TUNNELING:</u>	GFRP rebar for soft eye, tunnel support & invert drainage
<u>SPECIAL SERVICE:</u>	Geomembrane leak location survey, HDPE pipe welding, HDPE lining repair



CERTIFICATE

N° SCUUK000938E

certifies that:

G and E Company Limited

14/F, Kiu Yin Commerical Building, 361-363 Lockhart Road, Wanchai, Hong Kong

operates a management system that has been assessed as conforming to:

ISO 9001 : 2015

for the scope of activities:

General Construction installation work Service and sales of Construction material such as Geosynthetics

Issue date: **1st July 2019**

Valid until: **27th March 2021** (Subject to adherence to the agreed ongoing programme, successful endorsement of certification following each audit and compliance with the terms and conditions of certification.)

Original date of certification: **22nd January 2014**

Matthew Westby Operations Director UK



SOCOTEC Certification UK Ltd - 6 Gordano Court -
Serbert Close- Portishead - Bristol BS20 7FS
UNITED KINGDOM

www.socotec-certification-international.com

Material Submission

BONTEC SG110/110 Woven Polypropylene Geotextile



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January 2019



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5) **Installation Guideline**

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6) **Project Reference**

- Name and details of Project
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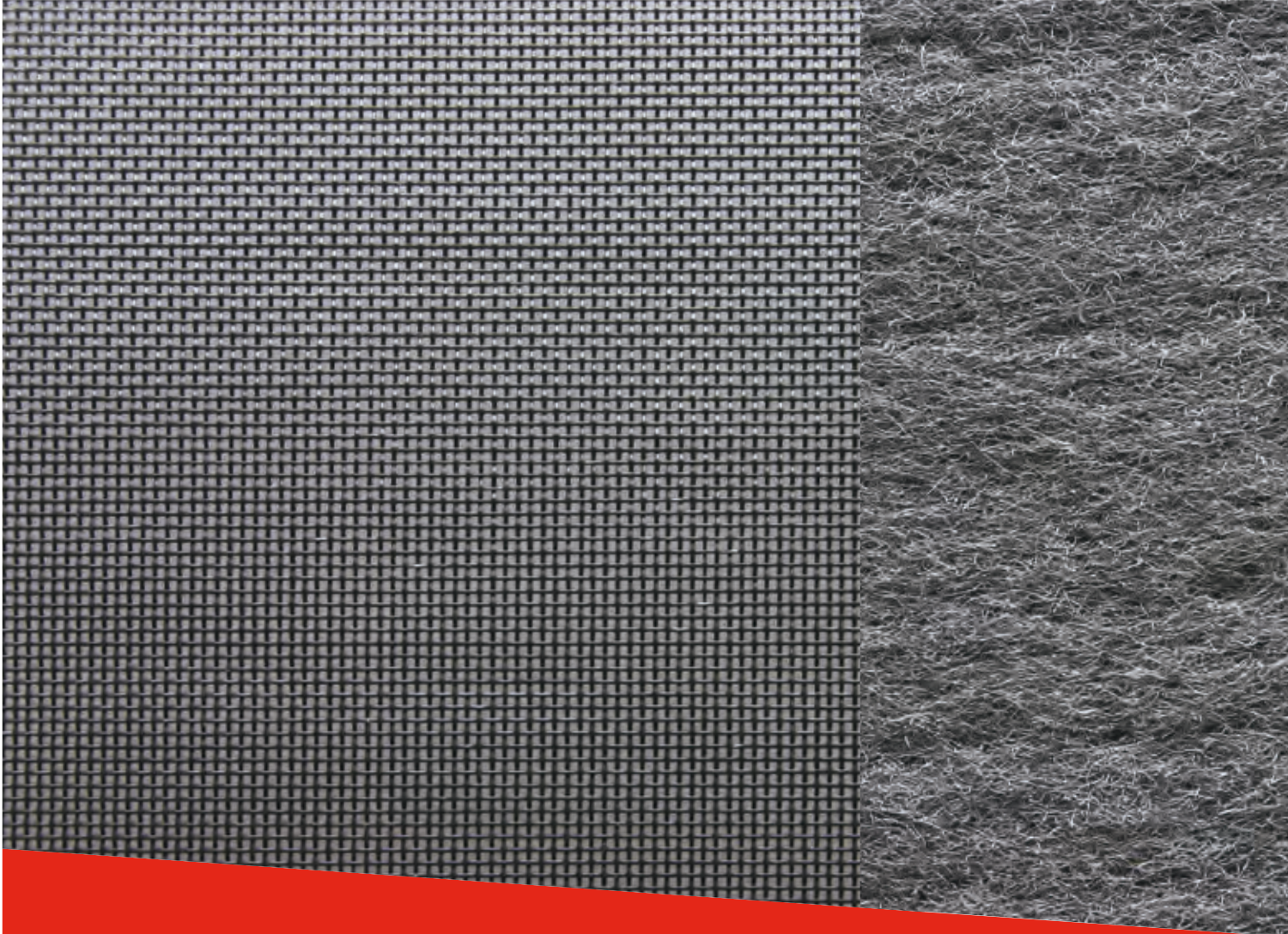
- Product Recognition and Acceptance

8) **About the Supplier – G and E Company Limited**

- An Introduction to G and E Company Limited
- ISO 9001:2015 Certificate

bontec

woven and nonwoven geotextiles



GEOTEXTILE

WE UNDERCOVER
THE WORLD



Bonar
partners in performance

Bontec Geotextile

Bontec is an internationally renowned brand of geotextiles. We have earned this reputation over the past thirty years thanks to our quality, service and flexible production processes. This flexibility is a result of the vertical integration of our production. We control the entire process – from raw materials to finished product – for both our woven and nonwoven varieties.

We are therefore not dependent upon the quality or delivery time of others, and we can guarantee your success. Our Bontec brand offers state of the art woven and nonwoven geotextiles that provide answers to meet all of your challenges. Thanks to continuous research and investment in the latest technology, we provide the best solutions for all possible functions of geotextiles.

Nonwoven process Woven process

Starting with polypropylene granules,

we extrude endless synthetic filaments. After stretching and shrinking, these filaments are cut into fibres.

These fibres are then deposited in layers by a crosslapper.

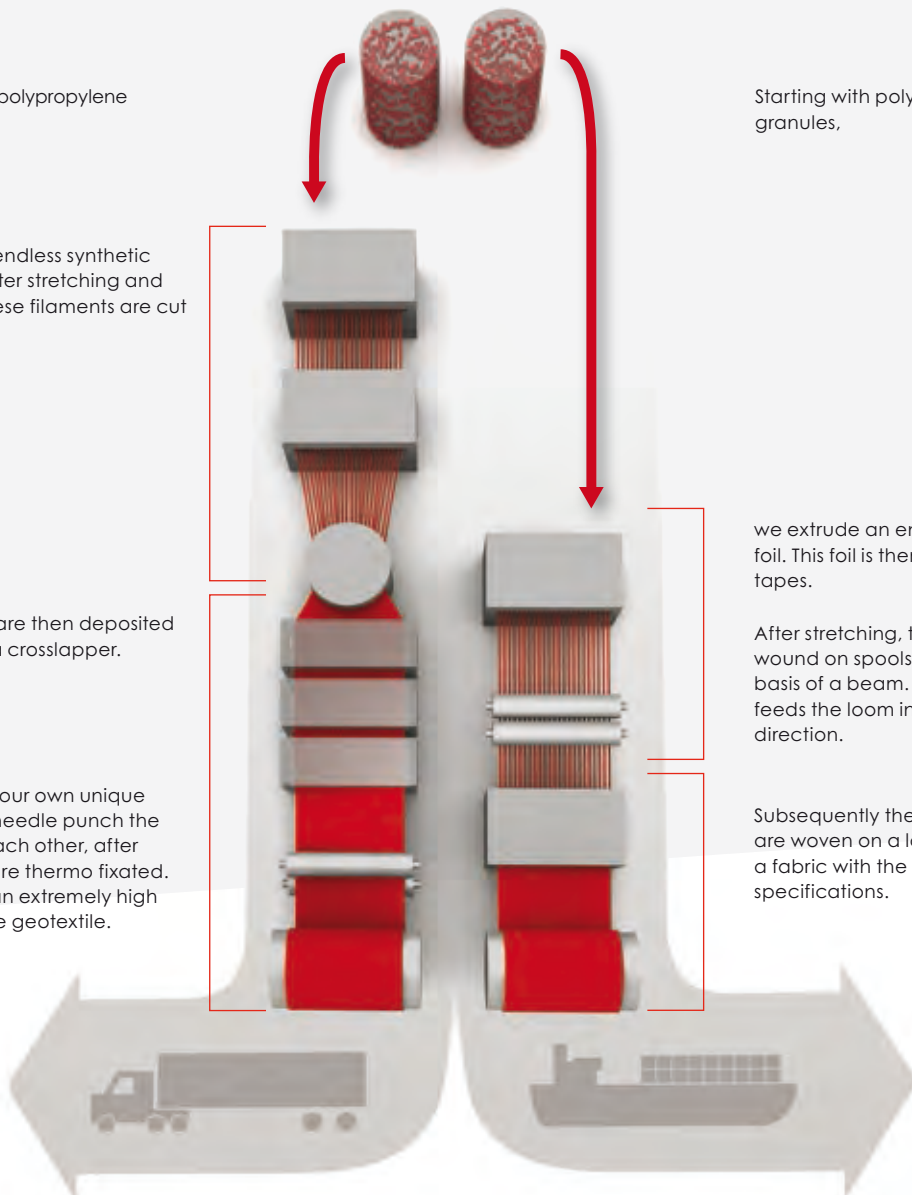
By means of our own unique process we needle punch the layers into each other, after which they are thermo fixated. The result is an extremely high performance geotextile.

Starting with polypropylene granules,

we extrude an endless synthetic foil. This foil is then cut into fine tapes.

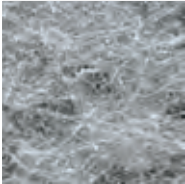
After stretching, the tapes are wound on spools that form the basis of a beam. That beam feeds the loom in the machine direction.

Subsequently the tapes are woven on a loom to a fabric with the desired specifications.



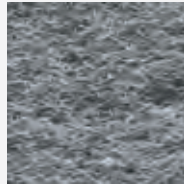
Nonwoven Geotextile

NW Thermally Bonded Nonwoven Geotextiles



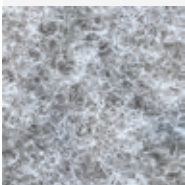
Produced by applying mechanical and thermal bonding processes. NW has the highest tensile strength of the range and is used primarily for lightweight separation and filtration. Its excellent hydraulic properties are ideal for use in filtration applications. Typical uses include the encapsulation of a trench drain.

VNW Nonwoven Needle Punched (Colored) Geotextile



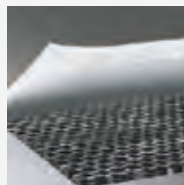
Produced by needle punching colored polypropylene fibres. The range varies from 200 to 2,000 g/m². VNW is used for protection of membranes, as a component for drainage composites, or as a component for erosion control composites.

SNW Superior Needle Punched Nonwoven Geotextiles



Produced in a manner similar to NW, SNW offers extraordinary properties for its very low weight. SNW is used primarily in circumstances that require both high tensile strength and elongation. Typical areas of application include membrane protection in reservoirs and landfills.

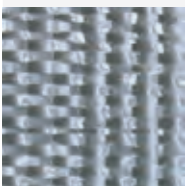
LG Geocomposites



For the production of LG, woven and nonwoven geotextile are needle punched together. This process combines the properties of the two types in a single layer. These products are used in situations that require a high tensile strength as well as extreme protection.

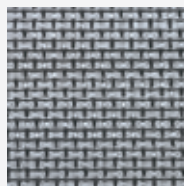
Woven Geotextile

SG Lightweight 'Standard Grade' Woven Geotextile



These lightweight, woven geotextiles from 65 to 250 g/m² are used primarily for separation. For example, SG prevents good quality sand or granules from mixing with underlying soil. It is used for the construction of roads, parking lots and airport runways.

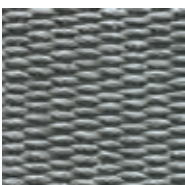
HF 'High Flow' Woven Geotextile



Thanks to their specific structure, HF geotextiles have high permeability. This quality is very important for erosion control and infiltration applications. Typical applications include:

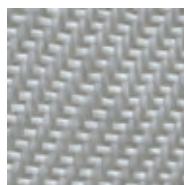
- As an under layer for concrete revetment blocks or between dissimilar layers of quick draining granular fill consisting of fine sand and rounded gravel.
- The envelopment of infiltration crates or tubes for rainwater management.

SG Heavyweight 'Standard Grade' Woven Geotextile



These heavyweight, woven geotextiles vary from 250 to 600g/m² and they possess tensile strengths up to 200 kN/m and above. Heavyweight SG is used in heavy load circumstances, such as temporary basal reinforcement, coastal reinforcement and soil stabilization.

HS 'High Strength' Woven Geotextile



The polyester wovens have a very high tensile strength of up to 600 kN /m. This strength and their very low stretch make them ideal for situations where:

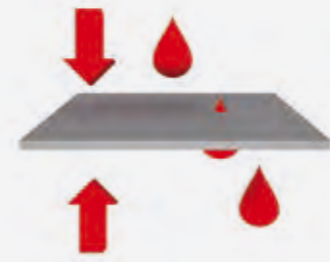
- Reinforcement of the ground is essential.
- The construction of very steep, or even vertical, slopes with different types of soil is required.

Use of Geotextiles



1 Erosion control

In erosion control, the geotextile protects soil surfaces from the tractive forces of moving water or wind and rainfall erosion.



2 Filtration

The use of geotextiles in filter applications is probably the oldest, most widely known, and most used function of geotextiles. The geotextile is used to prevent fine soil particles from moving with the water flow normal to the plane.



3 Protection

A geotextile can be used as a protective layer against mechanical damage during installation and after the completion of a particular construction project. It will help prevent the puncturing of geomembranes used in constructions such as tunnels, landfills or reservoirs.



4 Drainage

When functioning as a drain, a geotextile acts as a conduit for the movement of liquids or gasses in the plane of the geotextile. Relatively thick nonwoven geotextiles are the products most commonly used. Selection should be based on transmissivity, which is the capacity for in-plane flow.



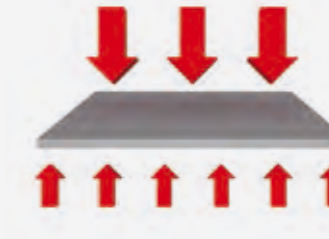
5 Stress relief

The geotextile provides a stress-relieving interlayer between the existing pavement and the overlay that reduces and retards reflective cracks under certain conditions. It also acts as a moisture barrier to prevent surface water from entering the pavement structure.



6 Reinforcement

The geotextile interacts with soil through friction or adhesion forces to resist tensile or shear forces. To provide reinforcement, a geotextile must have sufficient strength, low elongation and low creep to avoid movement of the structure.



7 Separation

Separation is the process of preventing two dissimilar materials from mixing. In this function, a geotextile is most often required to prevent the undesirable mixing of fill and natural soils or of two different types of fill.



Value chain

World player with local market presence

- Most complete product range
- Vertically integrated production - from raw material to finished stock
- Strong logistic service and stock supported key products to meet market needs
- Health and Safety from production right through delivery on site as an absolute priority
- Over 30 years of experience in a constantly evolving hi-tech market:
 - > Innovation driven
 - > Project specific engineered solutions

Advantages of Bontec Geotextiles

- Intelligent installation techniques
- Cost and energy saving
- Increased life-span of projects



PRODUCTION SITES

- Belgium - Zele & Lokeren
- China - Yizheng
- Germany - Groß Ippener & Obernburg
- Hungary - Tiszaújváros
- Saudi-Arabia - Yanbu
- The Netherlands - Arnhem & Emmen
- USA - Asheville, NC

Development Centers in the Netherlands, Belgium and USA
Sales offices in UK, France and China



PRODUCT PORTFOLIO

Geotextiles
Geocomposites
Geogrids
Geocells
Vertical Drains
Erosion Control Systems
Construction Fibres

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partners in performance

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SG WOVEN GEOTEXTILES

we under^{cover} the world

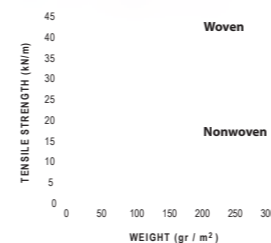
A TOTAL RANGE OF GEOTEXTILES

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 E-MAIL: geotextiles@bonaryarns.com

website: www.bonartf.com

bontec
 woven and nonwoven geotextiles



SEPARATION



REINFORCEMENT



Other geotextiles available within the Bontec range include Highflow, High strength Wovens and Thermally Bonded & Needle-punched Nonwovens

Visit us at our website:
www.bonartf.com

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 E-MAIL: geotextiles@bonaryarns.com

SG Woven Geotextiles PRODUCT PROFILE

“An exciting range of Standard Grade geotextiles that offer the perfect solution to your Separation requirements. With tensile strengths ranging from 10 to 300 kN/m you can be certain that an SG fabric will be available with the performance that you are looking for.”

DAILY SEPARATION, SOIL STRENGTHENING OR GROUND REINFORCEMENT?

Bontec SG woven geotextiles are manufactured from polypropylene tapes & yarns, and exhibit an excellent chemical resistance to commonly encountered acids and alkalis at ambient temperatures. Available in a lightweight range with products from 80 to 200g/m², and a heavyweight range from 200 to 800g/m².

Bontec SG facts include:

Tensile strengths up to 300 kN per metre (kN/m) width
 CBR Puncture Strengths ranging from 1.800 N to 12.500 N

SG Mechanical Properties that offer maximum strength at minimal cost and ensure the products survivability both against installation damage and in the longer term.

Lightweight woven geotextiles typically offer greater mechanical strengths per unit weight than comparable nonwoven grades. This makes lightweight woven geotextiles the ideal choice for separation

Waterflows normal to the plane that are generally several times more than that required by design

A range of consistent opening sizes suited for use in soils ranging from clay to coarse granular fill.

SG hydraulic properties that are suited to the demands of everyday separators.

Available ex-stock in 4.5m and 5.25m wide rolls or other widths to order

Typical applications for SG woven geotextiles include:

As a general purpose separator for use under site access roads and areas of hardstanding.

As a separation and strengthening layer under new roadways, car parks, industrial units etc.

As an erosion control layer under heavy rock armour in coastal defence projects. For any separation application where there exists a need to prevent the intermixing of soft foundation soils with good clean granular fill.

SG Woven Geotextiles have been manufactured as a cost effective solution to your soil separation and stabilisation applications. They are manufactured from highly durable polypropylene polymer and have a long life expectancy when used in permanent structures.

For further product information, be it a technical data sheet or to discuss your project with one of our in-house geotextile experts please do not hesitate to contact one of our offices listed below.

Headquarters: **BONAR TECHNICAL FABRICS NV/SA**
 Industriestraat 39 | B-9240 Zele | BELGIUM
 T.: +32 (0) 52 457 487 | F.: + 32 (0) 52 457 495
 E-MAIL: geotextiles@bonartf.com

Bontec® SG 110/110

Heavy weight Polypropylene Woven Geotextiles

Technical data sheet

Product description

Polymer	Density	Melting Point	Construction
100% Polypropylene	0,91 kg/dm ³	165 °C	Tapes

Properties

Mechanical Properties	Standard	Performance	Tolerance
Tensile strength - MD	EN ISO 10319	110 kN/m	-9,9 kN/m
Tensile strength - CMD	EN ISO 10319	110 kN/m	-9,9 kN/m
Elongation at maximum load - MD	EN ISO 10319	10 %	+/-2,3 %
Elongation at maximum load - CMD	EN ISO 10319	8 %	+/-1,8 %
Static puncture resistance (CBR)	EN ISO 12236	12,5 kN	-2,5 kN
Dynamic perforation resistance (cone drop)	EN ISO 13433	10 mm	+2,0 mm
Tensile strength at 2% elongation - MD	EN ISO 10319	15 kN/m	
Tensile strength at 2% elongation - CMD	EN ISO 10319	25 kN/m	
Tensile strength at 5% elongation - MD	EN ISO 10319	45 kN/m	
Tensile strength at 5% elongation - CMD	EN ISO 10319	60 kN/m	

Hydraulic Properties	Standard	Performance	Tolerance
Water permeability normal to the plane (Vlh50)	EN ISO 11058	25 l/m ² s	-8 l/m ² s
Characteristic Opening Size (O90)	EN ISO 12956	230 µm	+/-69,0 µm

Physical Properties	Standard	Performance	Tolerance
Weight	EN ISO 9864	464 g/m ²	+/-46,4 g/m ²
Length (+/- 1%) x width (+/- 1%)		100 x 5,25 m	
Truck Load Volume (+/- 10%)		30450 m ²	
Roll diameter (+/- 10%)		45 cm	

Durability	Standard	Performance	
Predicted minimal durability in years in natural soils with 4 < pH < 9 and soil temperatures < 25°C	EN 13249 +1 : 2015	60 years	

The Quality Management System of Bonar has been approved to the ISO 9001 Quality Management System Standard. Certificates are available on request.

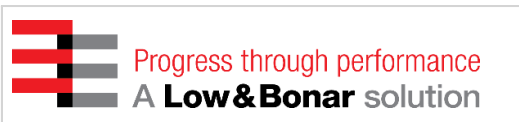


The information set forth in this data sheet reflects the best knowledge at the time of publication. The document is subject to change pursuant to new developments and findings. The same reservation applies to the properties of the products described. No liability is undertaken for results obtained by usage of the products and information.

Version date : 1/11/2014

3

Version n°



Low & Bonar NV
Industriestraat 39, 9240 Zele, Belgium
T: +32 (0) 52 457 487 / F: +32 (0) 52 457 495
info@lowandbonar.com / www.bontecgeosynthetics.com

QUALITY MANAGEMENT SYSTEM CERTIFICATE

ISO 9001 : 2015

BQA nv hereby declares that the management system of the company BontexGeo NV

BontexGeo
Leading in Geosynthetics

*located at Industriestraat 39 - 9240 Zele - Belgium, has been examined
and found in conformity with the ISO 9001, edition 2015, standard for the following application field:*

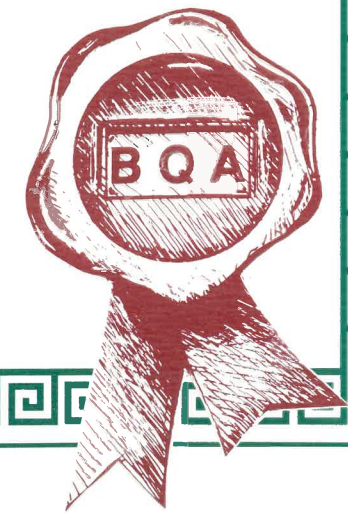
***Development, manufacturing & sales of a standard range of technical textiles such as building textiles and geosynthetics,
as well as similar products especially designed to customer specifications.***

*This certificate has been issued by BQA nv according to its quality manual concerning the certification of
systems, and after concluding the contract of certification N° CER_IUY_QMS_17-3-2020_301_N
under which the company accepts a regular control of its management system.*

*Certificate N° BQA_QMS_C_2004301
Issue date 2020-03-17
Valid until 2023-03-19*



*D. SIMOENS
Directeur*



Any person aware of misuse of this certificate may address himself to BQA nv. This certificate may only be disclosed in its entirety.

BQA nv – Technologiepark-Zwijnaarde 70 - 9052 Gent Zwijnaarde

CERTIFICATE OF ENVIRONMENTAL MANAGEMENT SYSTEM ISO 14001 : 2015

BQA nv hereby declares that the environmental management system of the company BontexGeo NV

BontexGeo
Leading in Geosynthetics

*located at Industriestraat 39 – 9240 Zele - Belgium, has been examined
and found in conformity with the ISO 14001, edition 2015, standard for the following application field:*

Development, manufacturing & sales of a standard range of technical textiles such as building textiles and geosynthetics, as well as similar products especially designed to customer specifications.

This certificate has been issued by BQA nv according to its quality manual EMS concerning the certification of environmental management systems, and after the contract of certification N° CER_IUY_EMS_17-03-2020_411_N under which the company accepts a regular control of its environmental management system.

Certificate N° BQA_EMS_C_200402

Issue date 2020-03-17

Valid until 2023-03-19



019-EMS

*D. SIMOENS
Directeur*



Any person aware of misuse of this certificate may address himself to BQA nv. This certificate may only be disclosed in its entirety.

BQA nv – Technologiepark-Zwijnaarde 70 – 9052 Gent-Zwijnaarde

Certificate of Conformity of the Factory Production Control 1213–CPR–5945

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product(s)

NW 5, 6, 6 UV, 7, 8, 8 D, 8/8 ABG, 8.5, 9, 10, 10 UV, 10 UV IT, 11, 12, 12 UV, 13, 130 N, 15, 15 I, 15 UV, 150 I, 16, 16 ABG, 160 N, 18, 18 UV, 19 UV, 20, 20 XUV, 200 I, 21, 21 UV, 23 P, 250 I,

GTX-N, needle punched, thermally treated; PP; used for the functions: S + F + D

25, 25 R, 26, 29, 30, 32, 32 R, 40, 40 R, 45,

GTX-N, needle punched, thermally treated; PP; used for the functions: S + F + D + P

Forte, Light, Medium, Supra, UNI, X Forte, X Light

GTX-N, needle punched, thermally treated; PP; used for the functions: S + F

SNW 100, 120, 140, 25, 25 XUV, 31, 40 UV, 46, 50, 50 SP, 55, 55 M, 55 XUV, 62, 70, 75, 75 XUV, 80, 85, 90,

GTX-N, needle punched; PP; used for the functions: S + F + D + P

14, 17, 17 T,

GTX-N, needle punched; PP; used for the functions: S + F + D

VNW 200-PP-K, 200-PP-Z, 300-PP-K, 350-PPZ30, 400-PP-K, 450-PP-K, 500-PP-K, 600-PP-K, 600-PPZ30, 700-PP-K, 800-PP-K, 1000 PP-K, 1200-PP-K, 1500-PP-K, 1800-PP-K, 2000-PP-K,

GTX-N, needle punched; PP; used for the functions: S + F + D + P

produced by or for

Bonar NV
Industriestraat 39
9240 Zele / Belgium

and produced in the manufacturing plant(s)

615

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s)

**EN 13249:2000/A1:2005; EN 13250:2000/A1:2005; EN 13251:2000/A1:2005;
EN 13252:2000/A1:2005; EN 13253:2000/A1:2005; EN 13254:2000/A1:2005;
EN 13255:2000/A1:2005; EN 13257:2000/A1:2005; EN 13265:2000/A1:2005**

under system 2+ for the performances set out in this certificate are applied and that the factory production control

fulfils all the prescribed requirements for these performances.

This certificate was first issued on 2014-11-04 and will remain valid as long as the test methods and/or factory production control requirements included in the harmonised standard(s), used to assess the performance of the declared essential characteristics, do not change, and the construction product, and the manufacturing conditions in the plant are not modified significantly, unless suspended or withdrawn by the factory production control certification body.

i. V.

Certificate of Conformity of the Factory Production Control 1213–CPR–5945

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product(s)

**PROTEC 250, 250 FR, 300, 33, 400, 500, 500 SP, 600, 700, 750, 750 XUV, 800 FR,
800, 800 XUV, 1000 FR,**

GTX-N, needle punched; PP; used for the functions: S + F + D + P

X 1000, X 1200

GTX-N, needle punched; PP; used for the functions: F + D + P

TS

1, 2,

GTX-N, thermally bonded; PP; used for the functions: S + F

3, 4, 5,

GTX-N, thermally bonded; PP; used for the functions: S + F + D

produced by or for

Bonar NV

Industriestraat 39
9240 Zele / Belgium

and produced in the manufacturing plant(s)

615

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s)

**EN 13249:2000/A1:2005; EN 13250:2000/A1:2005; EN 13251:2000/A1:2005;
EN 13252:2000/A1:2005; EN 13253:2000/A1:2005; EN 13254:2000/A1:2005;
EN 13255:2000/A1:2005; EN 13257:2000/A1:2005; EN 13265:2000/A1:2005**

under system 2+ for the performances set out in this certificate are applied and that the factory production control

fulfils all the prescribed requirements for these performances.

This certificate was first issued on 2014-11-04 and will remain valid as long as the test methods and/or factory production control requirements included in the harmonised standard(s), used to assess the performance of the declared essential characteristics, do not change, and the construction product, and the manufacturing conditions in the plant are not modified significantly, unless suspended or withdrawn by the factory production control certification body.

Würzburg, 04 November 2014

i. V.

Dipl.-Ing. Helmut Zanzinger
Certification Body



Ref: G&E042811(declaration SG110110)

Date: 26 April 2011

Attn: To whom it may concern

Declaration - Bontec SG 110/110 Woven Geotextile

We hereby would like to confirm that Bontec SG 110/110 woven geotextiles are made of silt film tapes. Silt film tapes are manufactured in our slit film extrusion department in Belgium, prior to being woven on Sulzer looms. The Geotextiles are being produced in accordance with:

- ISO 9001:2000 – Quality Certificate (in annex)
- ISO 14001: Environmental Certificate (in annex)

Bontec SG 110/110 woven geotextiles are:

- Resistant to all naturally occurring soil acids and alkalis;
- Resistant to biological attack;
- Resistant to deterioration caused by the effects of exposure to weather and burial; and
- Stable over the temperature range 0°C and 60°C.

The geotextiles have the following characteristics :

CBR Burst Strength (EN ISO 12236)	12,500N (*)
Tensile Strength (EN ISO 10319)	110kN/m (*)
Volume water flow rate (VWFR) at 100mm water head (EN ISO 11058)	25 l/m ² /s (at 50mm head) (*) 50 l/m ² /s (at 100mm head) (*)

(*) The common tolerances around the avg which are used in the industry are applied and are stated on the CE datasheets

Should you require further information, please do not hesitate to contact us.

Thank you.

Best Regards,

Koen Van Compernelle
Bonar Technical Fabrics

BONAR TECHNICAL FABRICS
Industriestraat 39
B-9240 Zele
BTW BE 421.053.442
T: 003252457483 - F. 003252457495

Zelee, 14/01/2019

CERTIFICATION OF COMFORMANCE

The undersigned supplier LOW & BONAR NV, hereby states under his responsibility that the following product complies with the indicated technical properties:

order 247038 your order PO 190110A

Type	NW 10 525	: 13.125,00 m ²
	SNW 120 525	: 2.756,25 m ²
	SG 20/20 F	: 7.875,00 m ²
	SG 110/110	: 10.500,00 m ²

Delivery docs : Packing list Nr T1900388 – T1900386

Manufacturer : Low & Bonar NV, Industriestraat 39, 9240 Zelee, Belgium
Goods are of Belgian (EU) origin

LOW AND BONAR NV



LOW & BONAR NV
Industriestraat 39
B - 9240 Zelee
BTW BE 0421 053 442
T. 0032 52 457 441
F. 0032 52 457 495



RECOMMENDATION FOR THE INSTALLATION OF GEOTEXTILES

- The **BONTEC** geotextiles shall be kept in its original packaging in order to protect it from damaging UV-rays and high temperatures.
- The **BONTEC** geotextiles shall be stored protected from wind, rain, excess moisture or sunlight.
- The **BONTEC** geotextiles shall only be unpacked just before use. The material shall be covered within 1 week
- The **BONTEC** geotextiles shall be labelled and show the following data :
 - roll number
 - quality
 - name of the manufacturer
 - roll length & width
 - roll weight
- The **BONTEC** geotextiles shall be laid with the longitudinal ascis down slopes
- A minimum overlap of 500 mm between the different sheets shall be respected. Sewing of the different fabrics shall be done with a double prayer stitching technique with non deteriorating thread.
- Wherever visibility or installation of the **BONTEC** geotextile is poor an extra safety overlap of +/- 1 m shall be respected
- The surfaces to be covered with **BONTEC** geotextiles shall be smooth and free of sticks, roots, sharp objects, and all debris that may damage the fabric. The surface to be covered shall be firm and unyielding, with no sudden changes or brakes in grade.
- The compacted sub-base shall be maintained in a smooth, uniform and compacted condition during installation of the fabric.
- In area's where wind is prevalent, fabric installation shall be started at the upwind side of the project and proceed downwind. The leading edge of the fabric shall be secured at all times with sandbags or other means sufficient to hold it down during high winds. Sandbags or rubber tires may be used as required to hold the fabric in position during installation. Tires shall not have exposed steel cords or other sharp edges which may snag or cut the fabric. Materials, equipment or other items shall not be dragged across the fabric or be allowed to slide down slopes on the fabric.
- Should the fabric be damaged during any step of the installation, the damaged section shall be repaired by covering it with a piece of fabric which extends at least 0,6 meter in all directions beyond the damaged area. The fabric shall be secured as directed by the engineer.
- Smoking shall not be permitted by personnel working on the fabric.



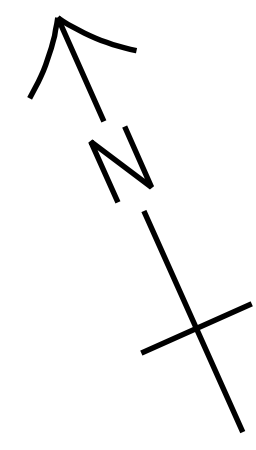
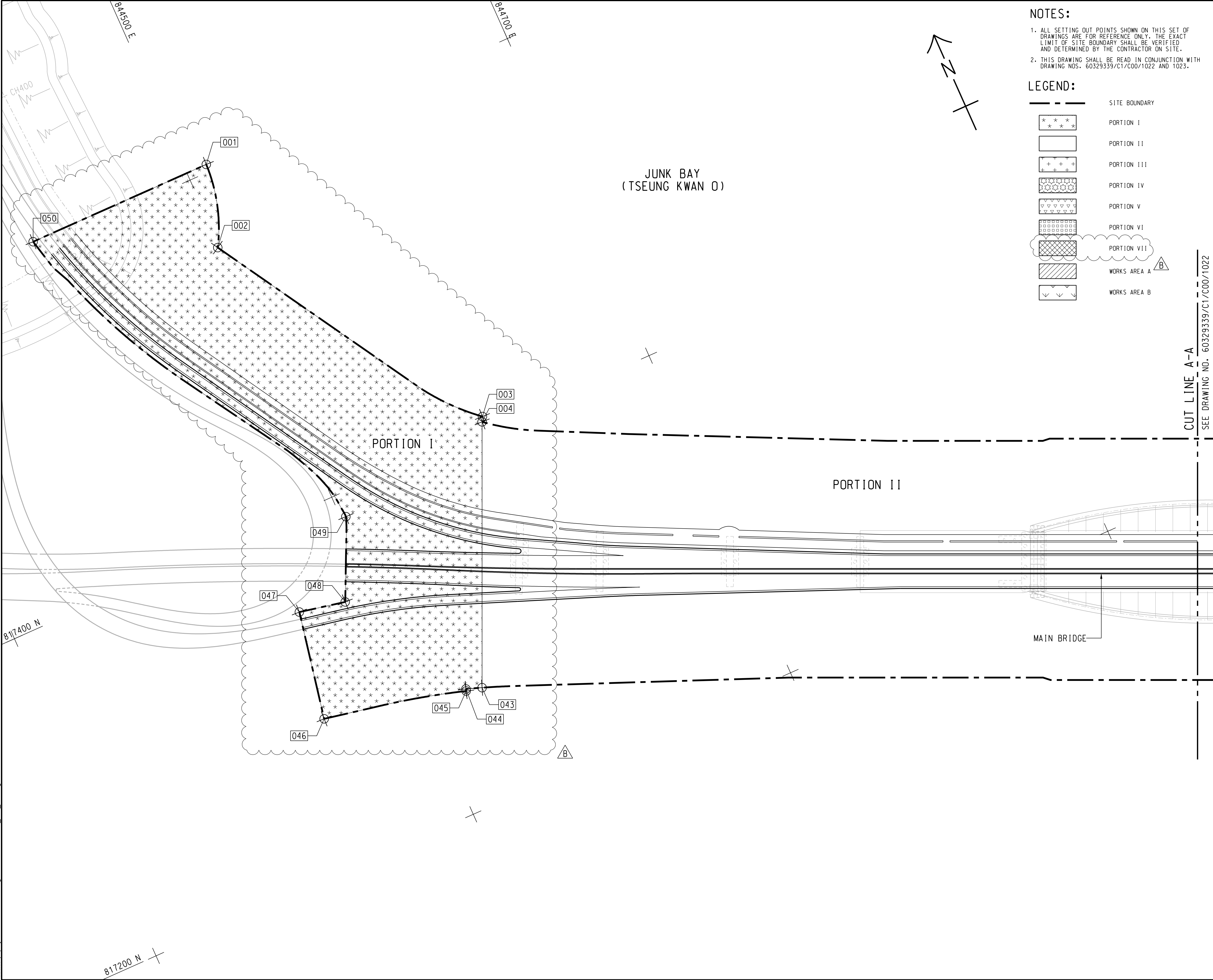
Appendix D – Silt Curtain Inspection Checklist



Appendix E – Site Layout

Project Management Initials: CNY
 Designer: WIN
 Checked: RPCM
 Approved: CWN
 ISO A1 594mm x 841mm

Plot File by: HUPF
 PATH: P:\Projects\60329339\drawing\contract\11000\C1_C00_1021.dgn



NOTES:

1. ALL SETTING OUT POINTS SHOWN ON THIS SET OF DRAWINGS ARE FOR REFERENCE ONLY. THE EXACT LIMIT OF SITE BOUNDARY SHALL BE VERIFIED AND DETERMINED BY THE CONTRACTOR ON SITE.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/C00/1022 AND 1023.

LEGEND:

- SITE BOUNDARY
- *** PORTION I
- PORTION II
- +++ PORTION III
- ▨ PORTION IV
- ▽▽▽ PORTION V
- PORTION VI
- ▨▨▨ PORTION VII
- ▨▨▨ WORKS AREA A
- ▽▽▽ WORKS AREA B

CUT LINE A-A
 SEE DRAWING NO. 60329339/C1/C00/1022



PROJECT

CROSS BAY LINK,
 TSEUNG KWAN O

CONTRACT TITLE
 CROSS BAY LINK, TSEUNG KWAN O
 MAIN BRIDGE AND ASSOCIATED WORKS

CLIENT



CONSULTANT

AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.
修訂	日期	內容摘要	核核
B	MAR.18	TENDER ADDENDUM NO. 4	RPCM
A	JAN.18	TENDER ADDENDUM NO. 1	RPCM
-	DEC.17	TENDER DRAWING	RPCM

STATUS

備核

SCALE

A1 1: 1000

DIMENSION UNIT

METRES

KEY PLAN

索引圖

PROJECT NO.

60329339

CONTRACT NO.

NE/2017/07

SHEET TITLE

PORTION OF SITE

SHEET NUMBER

60329339/C1/C00/1021B

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Project Management Initials: Designer: WIN Checked: RPCM Approved: CWN ISO A1 594mm x 841mm
 2018/038
 PATH: P:\Projects\60329339\drawing\contract\11000\C1_C00_1022.dgn

SETTING OUT POINTS

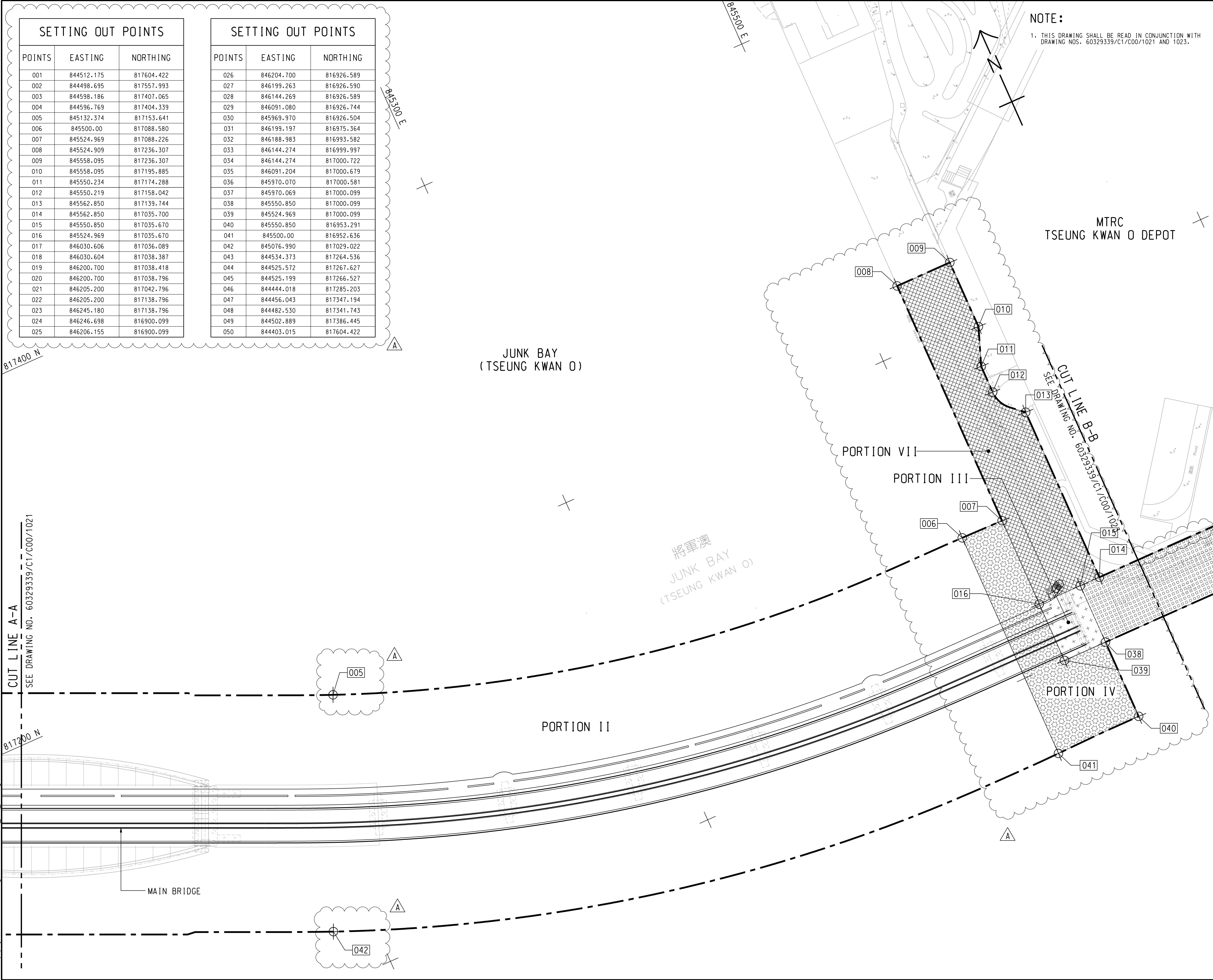
POINTS	EASTING	NORTHING
001	844512.175	817604.422
002	844498.695	817557.993
003	844598.186	817407.065
004	844596.769	817404.339
005	845132.374	817153.641
006	845500.00	817088.580
007	845524.969	817088.226
008	845524.909	817236.307
009	845558.095	817236.307
010	845558.095	817195.885
011	845550.234	817174.288
012	845550.219	817158.042
013	845562.850	817139.744
014	845562.850	817035.700
015	845550.850	817035.670
016	845524.969	817035.670
017	846030.606	817036.089
018	846030.604	817038.387
019	846200.700	817038.418
020	846200.700	817038.796
021	846205.200	817042.796
022	846205.200	817138.796
023	846245.180	817138.796
024	846246.698	816900.099
025	846206.155	816900.099

SETTING OUT POINTS

POINTS	EASTING	NORTHING
026	846204.700	816926.589
027	846199.263	816926.590
028	846144.269	816926.589
029	846091.080	816926.744
030	845969.970	816926.504
031	846199.197	816975.364
032	846188.983	816993.582
033	846144.274	816999.997
034	846144.274	817000.722
035	846091.204	817000.679
036	845970.070	817000.581
037	845970.069	817000.099
038	845550.850	817000.099
039	845524.969	817000.099
040	845550.850	816953.291
041	845500.00	816952.636
042	845076.990	817029.022
043	844534.373	817264.536
044	844525.572	817267.627
045	844525.199	817266.527
046	844444.018	817285.203
047	844456.043	817347.194
048	844482.530	817341.743
049	844502.889	817386.445
050	844403.015	817604.422

NOTE:

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60329339/C1/C00/1021 AND 1023.



AECOM

PROJECT
 項目
CROSS BAY LINK, TSEUNG KWAN O

CONTRACT TITLE
 CROSS BAY LINK, TSEUNG KWAN O
 MAIN BRIDGE AND ASSOCIATED WORKS

CLIENT
 業主
CEDD 土木工程拓展署
 Civil Engineering and Development Department

CONSULTANT
 工程顧問公司
AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工程顧問公司

ISSUE/REVISION
 修訂

I/R	DATE	DESCRIPTION	CHK.
A	MAR.18	TENDER ADDENDUM NO. 4	RPCM
-	DEC.17	TENDER DRAWING	RPCM

STATUS
 階段

SCALE
 比例
 A1 1: 1000

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號
 60329339

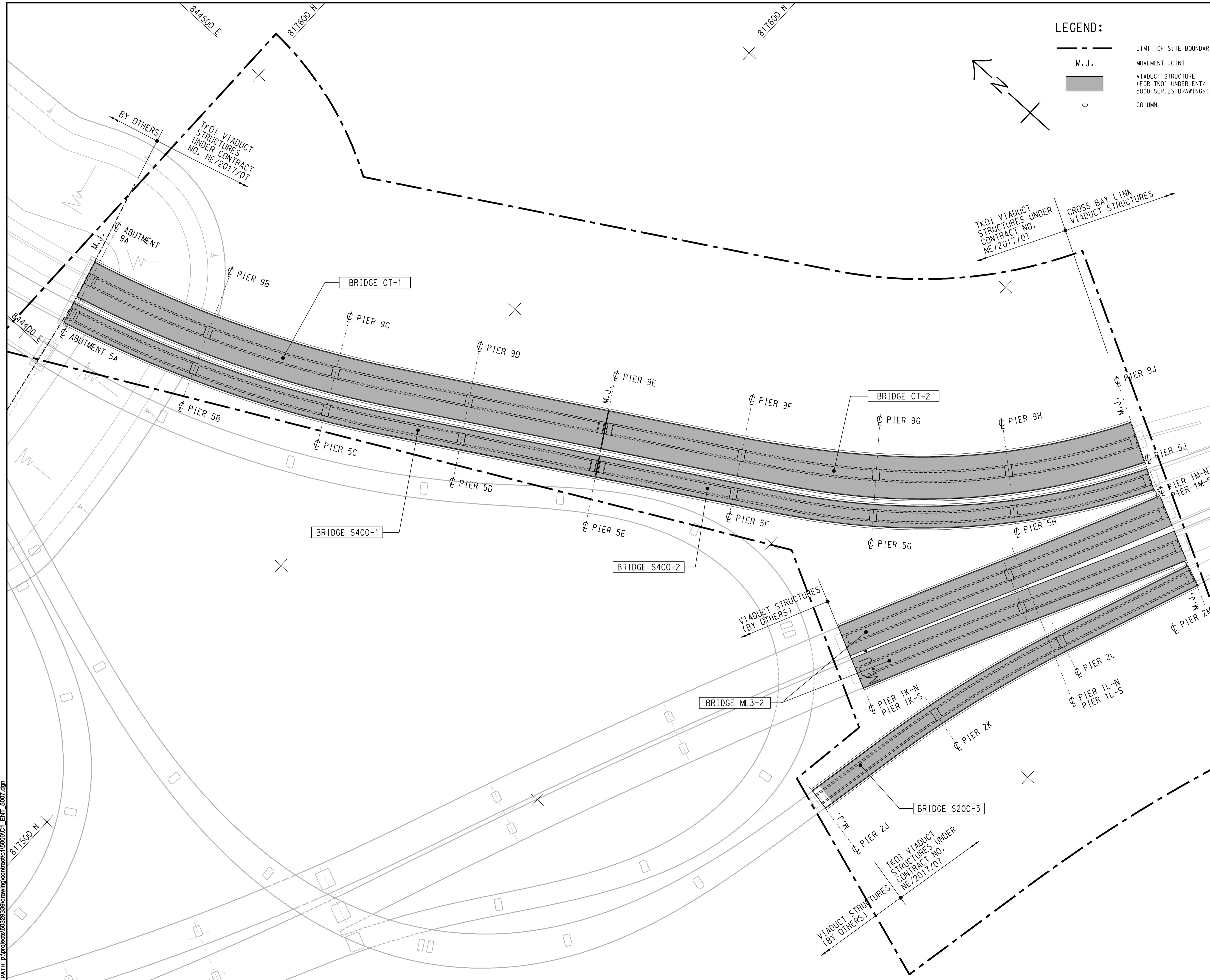
CONTRACT NO.
 合約編號
 NE/2017/07

SHEET TITLE
 圖紙名稱
 PORTION OF SITE

SHEET NUMBER
 圖紙編號
 60329339/C1/C00/1022A

SHEET 2 OF 3

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LEGEND:

- LIMIT OF SITE BOUNDARY
- M.J. MOVEMENT JOINT
- VIADUCT STRUCTURE (FOR TKO1 UNDER ENT/5000 SERIES DRAWINGS)
- COLUMN

AECOM

PROJECT
 項目
**CROSS BAY LINK,
 TSEUNG KWAN O**

CONTRACT TITLE
 CROSS BAY LINK, TSEUNG KWAN O
 MAIN BRIDGE AND ASSOCIATED WORKS

CLIENT
 業主
CEDD 土木工程拓展署
 Civil Engineering and
 Development Department

CONSULTANT
 工程顧問公司
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 分判工程顧問公司

ISSUE/REVISION
 修訂

I/R	DATE	DESCRIPTION	CHK.
修訂	日期	內容摘要	核核
-	DEC.17	TENDER DRAWING	CL

STATUS
 階段

SCALE
 比例
 A1 1 : 500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

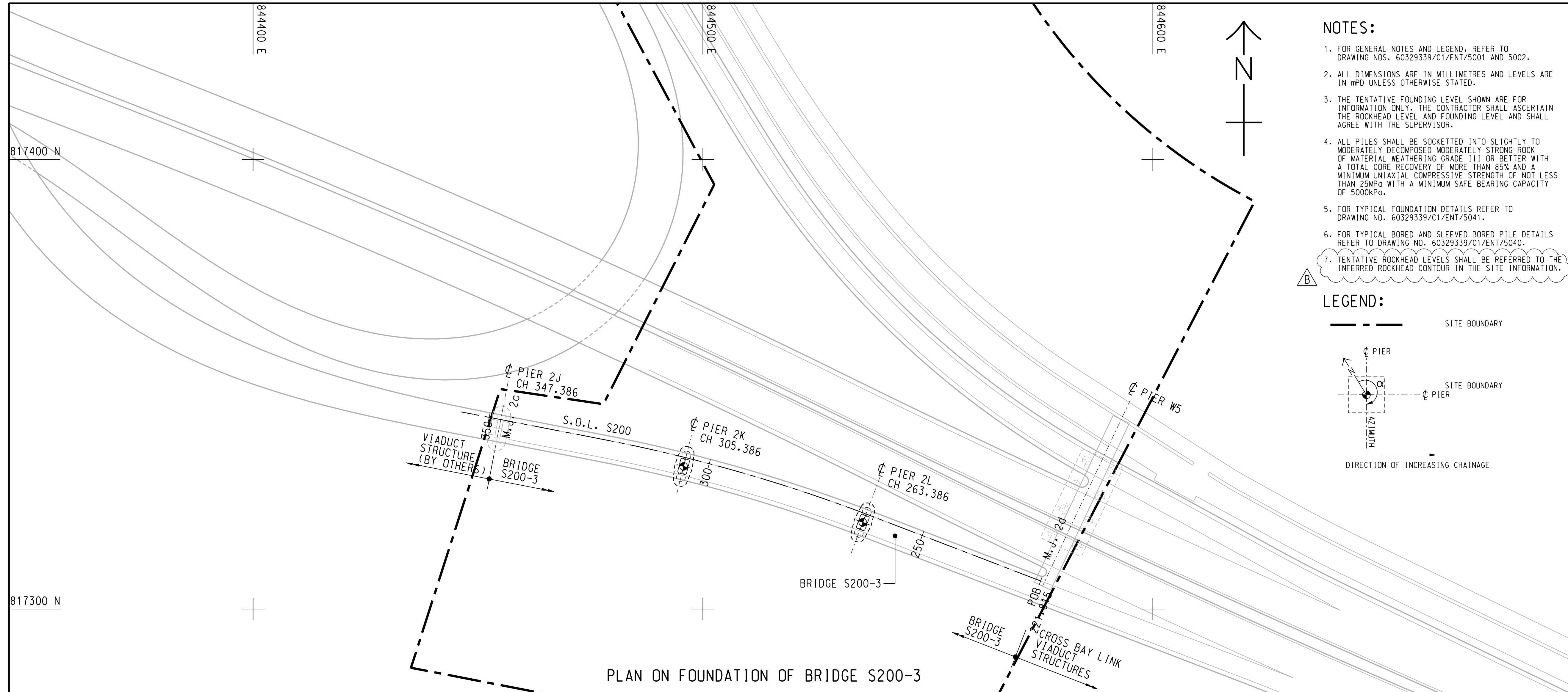
PROJECT NO.
 項目編號
 60329339

CONTRACT NO.
 合約編號
 NE/2017/07

SHEET TITLE
 圖紙名稱
 BRIDGE STRUCTURE
 LAYOUT PLAN

SHEET NUMBER
 圖紙編號
 60329339/C1/ENT/5007

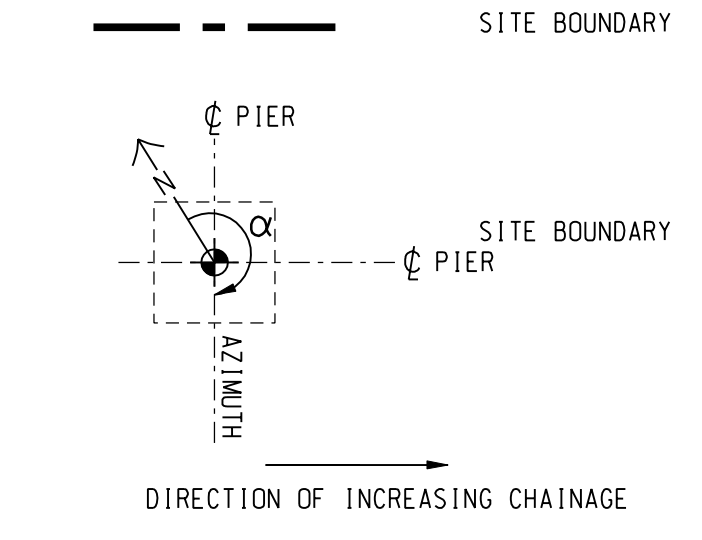
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NOTES:

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NOS. 60329339/C1/ENT/5001 AND 5002.
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN MPD UNLESS OTHERWISE STATED.
- THE TENTATIVE FOUNDING LEVEL SHOWN ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE ROCKHEAD LEVEL AND FOUNDING LEVEL AND SHALL AGREE WITH THE SUPERVISOR.
- ALL PILES SHALL BE SOCKETTED INTO SLIGHTLY TO MODERATELY DECOMPOSED MODERATELY STRONG ROCK OF MATERIAL WEATHERING GRADE III OR BETTER WITH A TOTAL CORE RECOVERY OF MORE THAN 85% AND A MINIMUM UNIAXIAL COMPRESSIVE STRENGTH OF NOT LESS THAN 25MPa WITH A MINIMUM SAFE BEARING CAPACITY OF 5000kPa.
- FOR TYPICAL FOUNDATION DETAILS REFER TO DRAWING NO. 60329339/C1/ENT/5041.
- FOR TYPICAL BORED AND SLEEVED BORED PILE DETAILS REFER TO DRAWING NO. 60329339/C1/ENT/5040.
- TENTATIVE ROCKHEAD LEVELS SHALL BE REFERRED TO THE INFERRED ROCKHEAD CONTOUR IN THE SITE INFORMATION.

LEGEND:



FOUNDATION SCHEDULE:

SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL (MPD)	MIN. SOCKET LENGTH (m)
2K	+2.50	S200	CH 305.386	13°58'31"	A2	2	BORED	2000	-0.40	-10.50	*REFER TO NOTE 7	1.50
2L	+2.50	S200	CH 263.386	20°44'25"	A2	2	BORED	2000	-0.40	-10.80	*REFER TO NOTE 7	1.50

AECOM

PROJECT
 項目
CROSS BAY LINK, TSEUNG KWAN O

CONTRACT TITLE
 CROSS BAY LINK, TSEUNG KWAN O
 MAIN BRIDGE AND ASSOCIATED WORKS

CLIENT
 業主
CEDD 土木工程拓展署
 Civil Engineering and Development Department

CONSULTANT
 工程顧問公司
AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工程顧問公司

ISSUE/REVISION
 修訂

I/R	DATE	DESCRIPTION	CHK.
B	MAR.18	TENDER ADDENDUM NO. 4	CL
A	JAN.17	TENDER ADDENDUM NO. 1	CL
-	DEC.17	TENDER DRAWING	CL

STATUS
 階段

SCALE
 比例
 A1 1: 500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

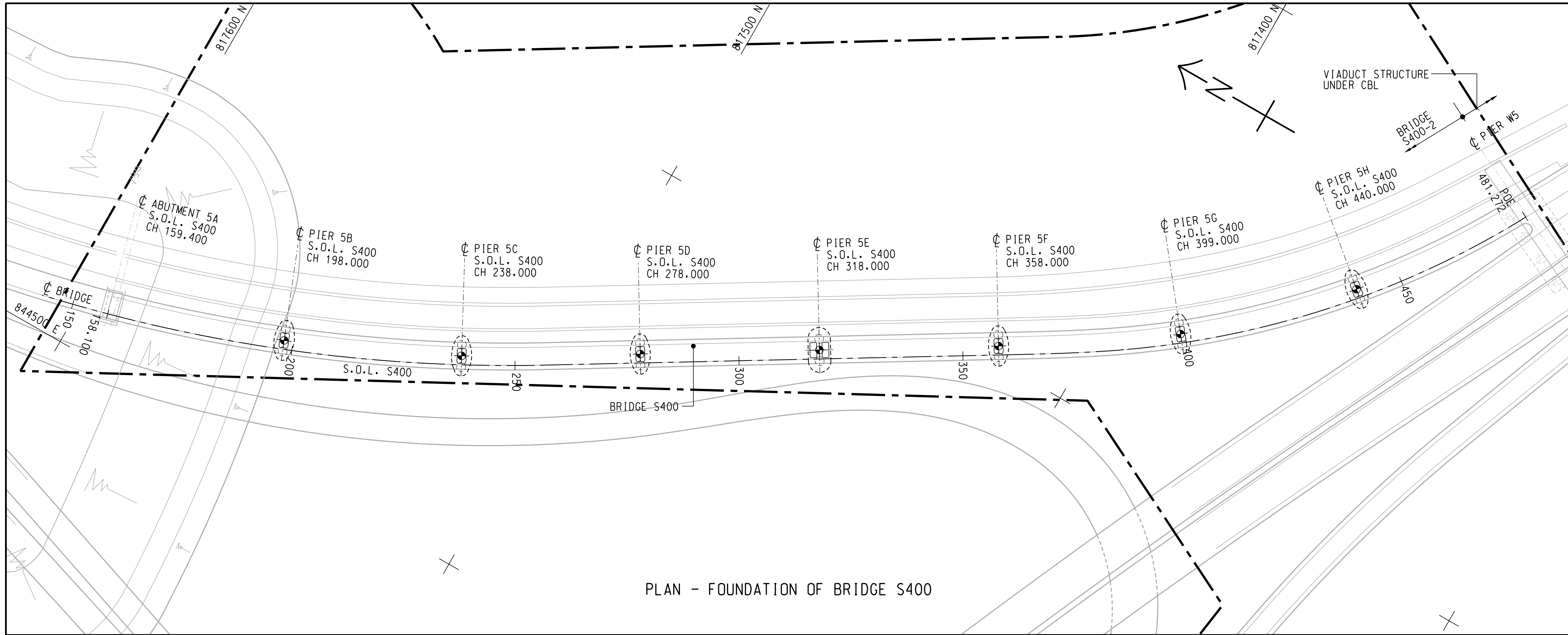
PROJECT NO.
 項目編號
 60329339

CONTRACT NO.
 合約編號
 NE/2017/07

SHEET TITLE
 圖紙名稱
 BRIDGE S200-3
 FOUNDATION LAYOUT

SHEET NUMBER
 圖紙編號
 60329339/C1/ENT/5167B

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PLAN - FOUNDATION OF BRIDGE S400

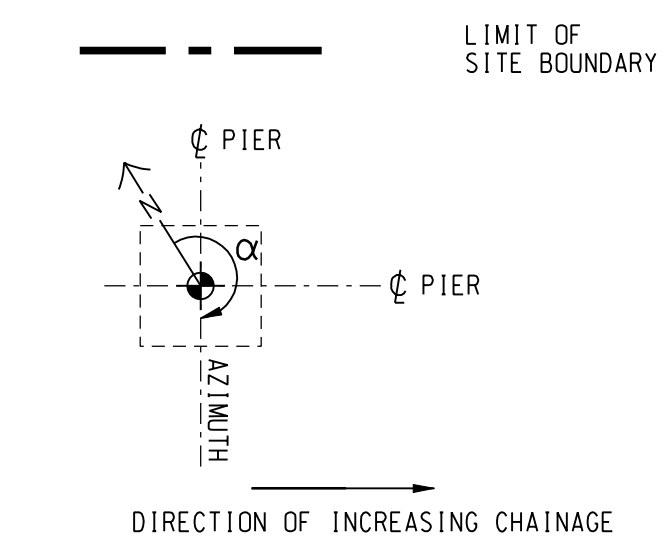
FOUNDATION SCHEDULE:

SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL (mPD)	MIN. SOCKET LENGTH (m)
5B	+2.50	S400	CH 198.000	248°24'25"	A1	2	SLEEVED	2000	-0.40	-7.10	* REFER TO NOTE. 8	5.00
5C	+2.50	S400	CH 238.000	241°55'58"	A1	2	BORED	2000	-0.40	-7.75		3.50
5D	+2.50	S400	CH 278.000	238°54'57"	A1	2	BORED	2000	-0.40	-9.85		2.50
5E	+2.50	S400	CH 318.000	238°54'57"	B3	2	BORED	2000	-0.40	-9.85		3.00
5F	+2.50	S400	CH 358.000	238°54'57"	A1	2	BORED	2000	-0.40	-10.20		1.50
5G	+2.50	S400	CH 399.000	231°39'58"	A1	2	BORED	2000	-0.40	-10.20		1.50
5H	+2.50	S400	CH 440.000	220°9'3"	A1	2	BORED	2000	-0.40	-10.80		1.50

NOTES:

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NOS. 60329339/C1/ENT/5001 AND 5002.
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN mPD UNLESS OTHERWISE STATED.
- THE TENTATIVE FOUNDING LEVEL AND CUTOFF LEVEL SHOWN ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE ROCKHEAD LEVEL AND FINISH GROUND LEVEL AND SHALL AGREE WITH THE SUPERVISOR.
- ALL PILES SHALL BE SOCKETTED INTO SLIGHTLY TO MODERATELY DECOMPOSED MODERATELY STRONG ROCK OF MATERIAL WEATHERING GRADE III OR BETTER WITH A TOTAL CORE RECOVERY OF MORE THAN 85% AND A MINIMUM UNIAXIAL COMPRESSIVE STRENGTH OF NOT LESS THAN 25MPa WITH A MINIMUM SAFE BEARING CAPACITY OF 5000kPa.
- EXACT ROCKHEAD LEVEL SHALL BE PROPOSED BY THE CONTRACTOR AND SUBJECTED TO THE ACCEPTANCE OF THE SUPERVISOR.
- FOR TYPICAL FOUNDATION DETAILS REFER TO DRAWING NO. 60329339/C1/ENT/5041.
- FOR TYPICAL BORED AND SLEEVED BORED PILE DETAILS REFER TO DRAWING NO. 60329339/C1/ENT/5040.
- TENTATIVE ROCKHEAD LEVELS SHALL BE REFERRED TO THE INFERRED ROCKHEAD CONTOUR IN THE SITE INFORMATION.

LEGEND:



ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
B	MAR.18	TENDER ADDENDUM NO. 4	CL
A	JAN.17	TENDER ADDENDUM NO. 1	CL
-	DEC.17	TENDER DRAWING	CL

STATUS

Final

SCALE

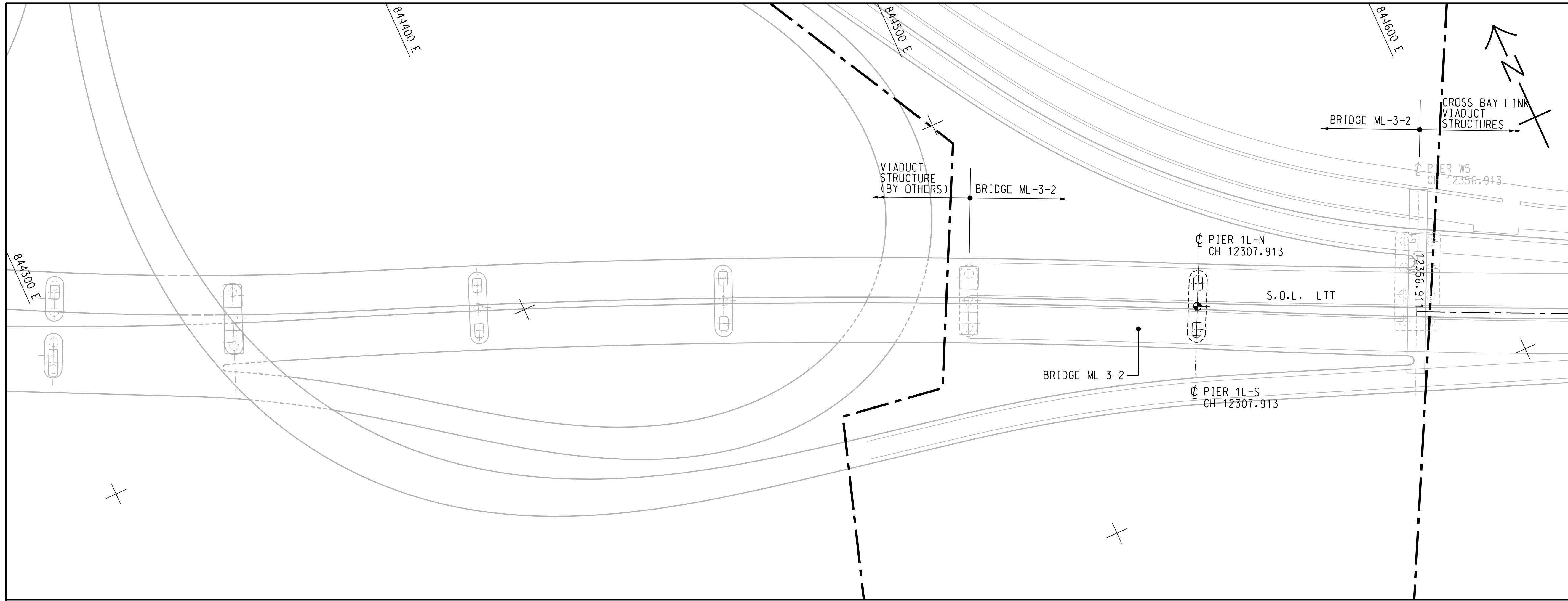
A1 : 500

DIMENSION UNIT

公尺/單位

KEY PLAN

See drawing



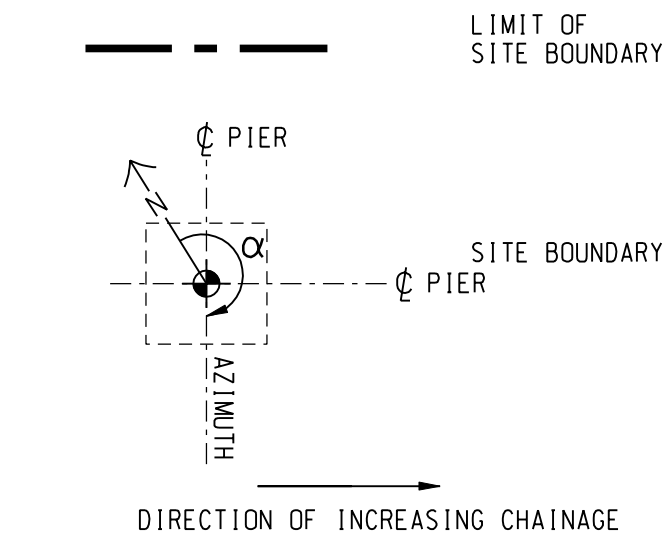
FOUNDATION SCHEDULE:

SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL m(PD)	MIN. SOCKET LENGTH (m)
1L	+2.50	LTT	CH 12307.913	206°18'97"	C	3	BORED	2000	-0.40	-10.80	* REFER TO NOTE. 8	5.50

NOTES:

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NOS. 60329339/C1/ENT/5001 AND 5002.
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN mPD UNLESS OTHERWISE STATED.
- THE TENTATIVE FOUNDING LEVEL SHOWN ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE ROCKHEAD LEVEL AND FOUNDING LEVEL AND SHALL AGREE WITH THE SUPERVISOR.
- ALL PILES SHALL BE SOCKETTED INTO SLIGHTLY TO MODERATELY DECOMPOSED MODERATELY STRONG ROCK OF MATERIAL WEATHERING GRADE III OR BETTER WITH A TOTAL CORE RECOVERY OF MORE THAN 85% AND A MINIMUM UNIAXIAL COMPRESSIVE STRENGTH OF NOT LESS THAN 25MPa WITH A MINIMUM SAFE BEARING CAPACITY OF 5000kPa.
- FOR TYPICAL FOUNDATION DETAILS REFER TO DRAWING NO. 60329339/C1/ENT/5041.
- FOR TYPICAL BORED AND SLEEVED BORED PILE DETAILS REFER TO DRAWING NO. 60329339/C1/ENT/5040.
- FOUNDATION FOR PIER 1M SHALL BE CONSTRUCTED BY THE CONTRACTOR UNDER AGREEMENT NO. CE6/2014(HY) BY OTHERS.
- TENTATIVE ROCKHEAD LEVELS SHALL BE REFERRED TO THE INFERRED ROCKHEAD CONTOUR IN THE SITE INFORMATION.

LEGEND:



ISSUE/REVISION
 修訂

I/R	DATE	DESCRIPTION	CHK.
B	MAR.18	TENDER ADDENDUM NO. 4	CL
A	JAN.17	TENDER ADDENDUM NO. 1	CL
-	DEC.17	TENDER DRAWING	CL

STATUS
 階段

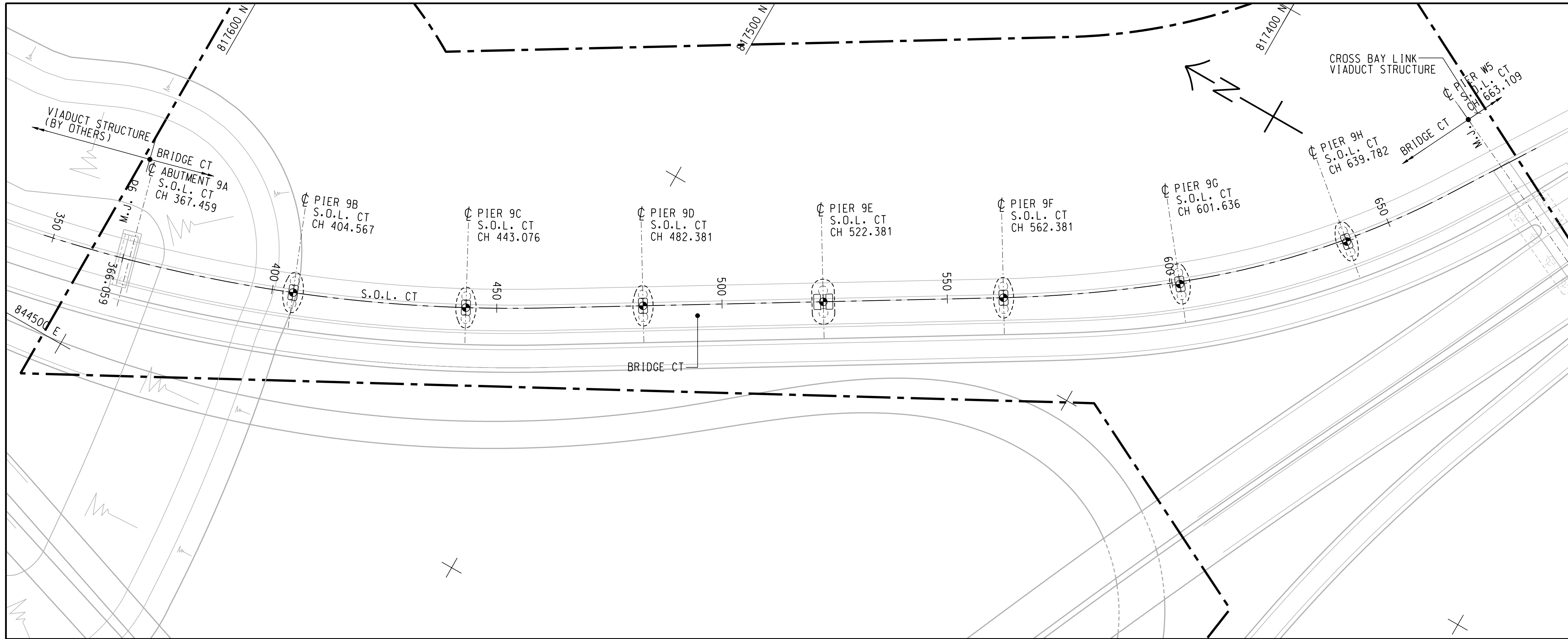
SCALE	DIMENSION UNIT
比例	尺寸單位
A1: 500	METRES

KEY PLAN
 索引圖

PROJECT NO.	CONTRACT NO.
項目編號	合約編號
60329339	NE/2017/07

SHEET TITLE
圖紙名稱
BRIDGE ML-3-2 FOUNDATION LAYOUT

SHEET NUMBER
圖紙編號
60329339/C1/ENT/5311B



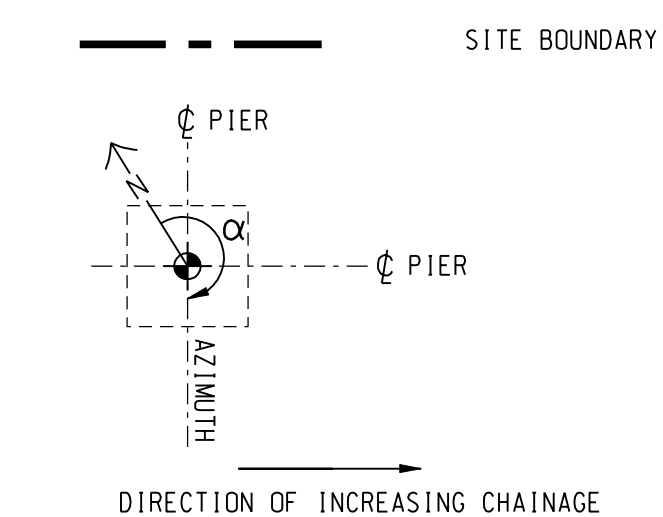
FOUNDATION SCHEDULE:

SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL (mPD)	MIN. SOCKET LENGTH (m)
9B	+2.50	CT	CH 404.567	248°24'25"	A1	2	SLEEVED	2000	-0.40	-7.10	* REFER TO NOTE. 8	4.50
9C	+2.50	CT	CH 443.076	241°55'58"	A1	2	BORED	2000	-0.40	-7.75		2.50
9D	+2.50	CT	CH 482.381	238°54'57"	A1	2	BORED	2000	-0.40	-9.85		2.00
9E	+2.50	CT	CH 522.381	238°54'57"	B3	2	BORED	2000	-0.40	-9.85		2.50
9F	+2.50	CT	CH 562.381	238°54'57"	A1	2	BORED	2000	-0.40	-10.20		2.00
9G	+2.50	CT	CH 601.636	231°39'58"	A1	2	BORED	2000	-0.40	-10.20		2.00
9H	+2.50	CT	CH 639.782	220°9'3"	A1	2	BORED	2000	-0.40	-10.80		2.00

NOTES:

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NOS. 60329339/C1/ENT/5001 AND 5002.
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN mPD UNLESS OTHERWISE STATED.
- THE TENTATIVE FOUNDING LEVEL AND CUTOFF LEVEL SHOWN ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE ROCKHEAD LEVEL AND FINISH GROUND LEVEL AND SHALL AGREE WITH THE SUPERVISOR.
- ALL PILES SHALL SOCKETTED INTO SLIGHTLY TO MODERATELY DECOMPOSED MODERATELY STRONG ROCK OF MATERIAL WEATHERING GRADE III OR BETTER WITH A TOTAL CORE RECOVERY OF MORE THAN 85% AND A MINIMUM UNIAXIAL COMPRESSIVE STRENGTH OF NOT LESS THAN 25MPa WITH A MINIMUM SAFE BEARING CAPACITY OF 5000kPa.
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- FOR TYPICAL FOUNDATION DETAILS REFER TO DRAWING NO. 60329339/C1/ENT/5041.
- FOR TYPICAL BORED AND SLEEVED BORED PILE DETAILS REFER TO DRAWING NO. 60329339/C1/ENT/5040.
- TENTATIVE ROCKHEAD LEVELS SHALL BE REFERRED TO THE INFERRED ROCKHEAD CONTOUR IN THE SITE INFORMATION.

LEGEND:



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A	JAN.17	TENDER ADDENDUM NO. 1	CL
-	DEC.17	TENDER DRAWING	CL

STATUS

Final

SCALE

As shown

DIMENSION UNIT

As shown

KEY PLAN

Refer to drawing 60329339/C1/ENT/5040



Appendix F – Environmental Mitigation Implementation Schedule

Environmental Protection Measures/Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation Agent	Implementation Stage	Requirements and/or Standards to be Achieved
<p><u>Marine Piling and Pile Excavation Works</u></p> <p>Marine piling and pile excavation works shall be undertaken in such a manner as to minimise re-suspension of sediments. Standard good practice measures shall be implemented, including the following requirements:</p> <ul style="list-style-type: none"> · All marine piling and pile excavation works shall be conducted within a floating single silt curtain. · Mechanical closed grabs (with a size of 5m³) shall be designed and maintained to avoid spillage and should seal tightly while being lifted. · Barges shall have tight fitting seals to their bottom openings to prevent leakage of material. · Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes. · Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water. Barges shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation. · Excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved. · Adequate freeboard shall be maintained on barges to reduce the likelihood of 	<p>To control potential impacts from marine piling and pile excavation works</p>	<p>During marine piling and pile excavation works</p>	<p>Contractor</p>	<p>Construction stage</p>	<ul style="list-style-type: none"> · TM-EIAO; · WPCO

Environmental Protection Measures/Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation Agent	Implementation Stage	Requirements and/or Standards to be Achieved
<p>decks being washed by wave action.</p> <ul style="list-style-type: none"> · All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash. · The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site. 					
<p><u>Monitoring</u> Implement a marine water quality monitoring programme under the EM&A on level of suspended solids (SS) / turbidity and dissolved oxygen (DO) shall be carried out.</p>	Control potential water quality impacts from marine piling and pile excavation works	Selected monitoring stations (Drawing no. 209506/EMA/WQ/001)	Contractor	Contraction stage	<ul style="list-style-type: none"> · TM-EIAO; · WPCO
The marine water quality monitoring programme recommended in Chapter 8 of this EIA report and this EMIS would also serve to protect the marine communities inside Junk Bay.	To minimize potential impacts on water quality and protect marine communities	Selected monitoring stations (Drawing no. 209506/EMA/WQ/001)	Contractor	Construction stage	<ul style="list-style-type: none"> · TM-EIAO; · WPCO

Environmental Protection Measures/Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation Agent	Implementation Stage	Requirements and/or Standards to be Achieved
Good Site Practices: – The integrity and effectiveness of all silt curtains should be regularly inspected. Effluent monitoring shall be incorporated to make sure that the discharged effluent from construction sites meets the relevant effluent discharge guidelines.	To minimize potential impacts on water quality and protect fishery resources	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> · TM-EIAO; · WPCO
The marine water quality monitoring programme recommended in Chapter 8 of this EIA report and this EMIS would also serve to protect the fishery resources.	To minimise potential impacts on water quality and protect fishery resources	Selected monitoring stations (Drawing no. 209506/EMA/WQ/001)	Contractor	Contraction stage	<ul style="list-style-type: none"> · TM-EIAO; · WPCO



Appendix G – Discharge License WT00032842-2018



Licence No. : WT00032842-2018
牌照編號 : WT00032842-2018

This Licence is Valid to : 31 March 2024
本牌照有效期至 : 二〇二四年三月三十一日

ENVIRONMENTAL PROTECTION DEPARTMENT
環境保護署

WATER POLLUTION CONTROL ORDINANCE (CAP. 358)

水污染管制條例(第358章)

LICENCE PURSUANT TO SECTION 15/20/23A*

按第15 / 20 / 23A*條簽發的牌照

The Director of Environmental Protection (“the Authority”) grants this licence under the Water Pollution Control Ordinance (“the Ordinance”) on the terms and conditions stated below.

環境保護署署長(「監督」)按下列的條款及條件，根據水污染管制條例(「本條例」)批給此牌照。

1 March 2019

Date
日期

(CHAN Wai-lun, William)

For the Authority

監督 (陳偉麟 代行)

PART A 甲部 : GENERAL TERMS 一般條款

Name of Licensee (“the Licensee”) 持牌人名稱(「持牌人」)	China Road and Bridge Corporation 中國路橋工程有限責任公司
Discharge Premises (“the premises”) 排放處所(「處所」)	Construction Site of Cross Bay Link, Tseung Kwan O - Main Bridge and Associated Works – Marine Works Area, Tseung Kwan O, N.T. (CEDD Contract No. NE/2017/07) (See Annex I) 新界將軍澳「將軍澳跨灣連接路 — 主橋及相關工程 — 海事工程」之建築地盤 (土木工程拓展署合約編號 NE/2017/07) (參見附件 I)
Water Control Zone 水質管制區	Junk Bay Water Control Zone 將軍澳水質管制區
Discharge Category 排放種類	Discharge of industrial trade effluent 工業污水排放
Nature of Discharge and Wastewater Treatment Facilities 排放性質及廢水處理設施	Effluent, Surface Run-off, and all other wastewater discharges from the premises 上址排放的污水，地面徑流水及其他的廢水 Screen, Sedimentation Tank, Chemical Precipitation and pH Adjustment 隔濾設施、沉澱池、化學沉降及酸鹼值調節
Discharge Point(s) 排放點	See Point(s) marked D.P.1 & D.P.2 on Annex I attached 參見附件 I 中標指 D.P.1 及 D.P.2 的排放點
Sampling Point(s) 取樣點	See Point(s) marked S.P.1 & S.P.2 on Annexes II & III attached 參見附件 II 及 III 中標指 S.P.1 及 S.P.2 的取樣點

*Delete as appropriate
將不適用者刪去

PART B 乙部 : SPECIFIC CONDITIONS 特別條件

B1. Limitations on Discharge 排放限制

The quantity and composition of any discharge from the premises shall not exceed the limits stated in the table below^(Note a). All figures are upper limits unless otherwise indicated. All units are expressed as concentration in milligramme per litre unless otherwise stated.

任何源自處所之排放的量和成份不得超過下表所列的限度^(附註 a)。除另予表明外，所有數字均為上限。除另予說明外，所有單位均以毫克/升的濃度表示。

Determinand 測量物	Limit 限度
Flow Rate (m ³ / day) 流量(立方米/日)	200
pH (pH units) 酸鹼值 (pH 單位)	6-9 [#]
Suspended Solids 懸浮固體	30
Chemical Oxygen Demand 化學需氧量	80

Range 上下限

B2. Self-monitoring and Reporting 自行監測及報告

The Licensee shall perform self-monitoring as and when required by the Authority.

持牌人須在監督要求時進行自行監測。

The Licensee shall sample the discharge at the Sampling Point(s) and, at his own expense carry out analyses in accordance with the sample type and measurement frequency specified for each determinand named below:-

持牌人須在取樣點為排放抽取樣本，並依照下列指定的測量物、取樣形式及頻率，自資予以分析。

Determinand 測量物	Unit 單位	Sample Type 取樣形式	Frequency 頻率
Suspended Solids 懸浮固體	mg/L 毫克/升	Grab 隨意取集	Bimonthly 每兩個月一次

Results of these monitoring shall be summarized in a report on a ~~Monthly~~/Bi-monthly/~~Quarterly~~/Yearly* basis and shall be submitted to the Authority.

所有監測結果須以摘要形式，每一個月/兩個月/三個月/年*作出報告，並須呈交監督審閱。

*Delete as appropriate
將不適用者刪去

C1. The Discharge 排放

C1.1 The discharge shall not contain polychlorinated biphenyls (PCB), polyaromatic hydrocarbon (PAH), fumigant, pesticide or toxicant, chlorinated hydrocarbons, flammable or toxic solvents, calcium carbide; any substance likely to damage the sewer or to interfere with any of the treatment processes, or to be harmful to the health and safety of any personnel engaged in the operation or maintenance of a sewerage system; waste liable to form scum or deposits in any part of the drainage or sewerage system, or the waters of Hong Kong; waste liable to form discolouration in any parts of the waters of Hong Kong; sludge, floatable substances or solids larger than 10 mm; and sludge or solid refuse of any kind.

排放不得含有多氯聯苯、聚芳烴、薰蒸劑、殺蟲劑或毒劑、氯化烴、可燃的或有毒的溶劑、碳化鈣；會損毀污水渠結構或干擾任何處理程序的物質，或有損操作及維修排污系統人員健康及安全的任何物質；足以及在排水或排污系統，或香港水域任何範圍內形成浮渣或沉積物的廢物；足以及在香港水域任何範圍內形成變色的廢物；污泥、漂浮物質或體積超越 10 毫米的固體；及任何種類的污泥或固體垃圾。

C1.2 No discharge shall bypass the wastewater treatment facilities, the Sampling Point(s) or the Discharge Point(s) unless it is unavoidable to prevent loss of life, personal injury or severe property damage or no feasible alternative exists.

除非避免人命傷亡或嚴重財物損失或無其他可行代替辦法，排放不得繞流不經其廢水處理設施，取樣點或排放點。

C1.3 Dilution of the discharge to achieve compliance with the limits contained in this licence is prohibited.

不得將排放稀釋，以求達到本牌照內所訂的限度。

C2. Flow Measurement 量度流量

The Licensee shall determine the flow rate of the discharge by installing, operating and maintaining a continuous flow measuring device with an accuracy certified by its manufacturer to be within plus or minus 3 percent of the actual flow, and calibrating the flow measuring device regularly according to manufacturer's recommendations. If no such device is installed, the Licensee shall determine the flow rate through using calculation methods agreed by the Authority, by making reference to the amount of water used in the premises being served by mains supply and other sources, less process consumption and any other losses.

持牌人必須設置、操作及保養一個連續性流量計作為測定排放的流量率之方法，其準確程度須經製造商證實為不超逾或低於真正流量的 3%，並應根據製造商建議的方法，定期校準流量計。如沒有設置該設備，持牌人須依照監督同意的計算方法，根據處所由自來水及其他水源供應的總用水量減去工序耗水量及其他耗水量來測定流量率。

C3. Treatment 處理

C3.1 The Licensee shall provide necessary wastewater treatment facilities, and shall engage personnel with adequate qualification and experience to properly operate and maintain all wastewater treatment facilities at all times. Standby equipment shall be provided to guard against failure of major treatment equipment.

持牌人須提供必需的廢水處理設施，並須僱用有足夠資格及經驗的人士，時常妥善操作及保養所有廢水處理設施。主要處理設施須配有後備裝置，以應付故障發生。

C3.2 In the event of loss of efficiency of operation, or failure of all or part of the wastewater treatment facility, the Licensee shall take all reasonable steps to the extent necessary to maintain compliance with this licence. Such steps shall remain until operation of the wastewater treatment facility is restored or an alternative method of treatment is provided.

倘若部份或整個廢水處理設施操作失靈或發生故障，持牌人須採取所有必要的合理措施，以求達到符合本牌照的規定。此等措施須維持至廢水處理設施恢復如常操作或有其他代替的處理方法可供採用為止。

C3.3 If the wastewater treatment facilities are not properly operated and maintained to the satisfaction of the Authority, the Licensee shall take immediate and effective remedial actions as required by the Authority.

倘若廢水處理設施的操作及保養未能令監督滿意，持牌人須按監督之規定，採取即時及有效的補救行動。

C4. Disposal 棄置

Sludges, screenings, solids, oil and grease, filter backwash, or other pollutants removed in the course of treatment shall be disposed of in a proper manner^(Note b & c).

處理過程中所產生的污泥、隔濾物、固體、油脂、過濾器回洗或其他污染物，必須妥善地棄置^(附註 b 及 c)。

C5. Monitoring 監測

C5.1 The Licensee shall provide and maintain suitable and accessible facility such as an inspection chamber, manhole or sampling valve at each Sampling Point to enable duly authorized officer(s) of the Authority to take samples of the discharge at any time from the premises.

持牌人須在每一個取樣點提供及保養適當及可容易到達的設施，例如檢查槽，沙井或取樣閥，以確保獲監督授權的人員隨時可在處所內抽取排放樣本。

C5.2 For self-monitoring, “grab samples” shall be taken during the period when the determinand to be analyzed for is likely to be present in its maximum concentration. “Composite samples” shall include samples taken over daily duration of the discharge.

在自行監測中，「隨意取樣本」須在測量物的濃度很可能是最高的那段時間內抽取。「綜合樣本」須包含在每日排放期間不同時候所抽取的樣本。

C5.3 For self-monitoring, all samples shall be analyzed in accordance with the most updated analytical methods used by the Government Chemist ^(Note d).

在自行監測中，所有樣本均須按照政府化驗師所採用的最新分析方法予以分析^(附註d)。

C6. Records and Reporting 紀錄及報告

C6.1 The Licensee shall keep the following records in the premises for inspection by duly authorized officer(s) of the Authority:

持牌人須在處所內保存下列紀錄，以備獲監督授權的人員隨時查閱：

(i) records of flow rate, nature and composition of the discharge;

排放流量率、性質及成份的紀錄；

(ii) updated records of all monitoring information, including all laboratory analytical results relating to samples taken, all original chart recordings for continuous flow and pH monitoring; and

所有最新監測資料的紀錄，包括所有關於已取樣本的檢驗分析結果、所有連續性流量及酸鹼值監測記錄圖表的正本；及

(iii) records of all desludging and degreasing operation, and records of corresponding disposal operation.

所有清除污泥和清理隔油池廢物工序的紀錄，及其棄置工序的紀錄。

Copies of all such records shall be submitted to the Authority upon request.

在監督要求時，須向監督呈交所有該等紀錄的副本。

C6.2 The Licensee shall notify and explain to the Authority: Director of Environmental Protection, Regional Office (E), Sai Kung Section by fax (fax no.: 2756 8588) or electronic mail (email address: hotline_e@epd.gov.hk) within 24 hours upon the occurrence of an accidental discharge or any emergency bypass or an overflow of untreated effluent or an operation upset which places the discharge in a temporary state of non-compliance with this licence. The Licensee shall within 7 days following the incident, submit to the Authority a detailed report in writing on the cause and duration of the non-compliance and steps taken or to be taken to reduce, eliminate, or prevent recurrence of such non-compliance. Reporting in accordance with this Condition does not relieve the Licensee of any obligations imposed by this licence.

倘若有未經處理的污水意外排放、緊急繞流或溢滿的事件或操作失靈，引至排放出現短暫不符合牌照規定的情況，持牌人須在事發後 24 小時內以傳真（傳真號碼：2756 8588）或電郵（電郵地址：hotline_e@epd.gov.hk）通知監督：環境保護署署長，區域辦事處（東）西貢區，並予以解釋。持牌人須在事故發生後 7 天內，以書面報告，詳述事件的起因、違反牌照條件的時間及為減少、消除或防止類似事件再次發生所採取或將會採取的措施，送交監督審閱。然而，按照本條件的規定提交報告並不表示持牌人可獲免除承擔本牌照內所載的任何責任。

C7. Operation Manual 操作手冊

The Licensee shall prepare an operation manual which shall include, as a minimum, operating procedures, inspection programme and repair and maintenance programme for the wastewater treatment facilities. The operation manual shall be kept at the aforesaid wastewater treatment facilities and a copy of the manual shall be submitted to the Authority upon request.

持牌人須擬備廢水處理設施的操作手冊。手冊內容須最低限度包括操作程序、檢查、維修及保養工作計劃表。該手冊須保存在上述廢水處理設施內。持牌人須在監督要求時，呈交手冊副本乙份。

C8. Notification of Change 更改通知

The Licensee shall notify the Authority: Director of Environmental Protection, Regional Office (E), Sai Kung Section by fax, (fax no.: 2756 8588) or electronic mail (email address: hotline_e@epd.gov.hk) in writing within 14 days of any changes or proposed changes in the wastewater treatment methods/facilities, the processes of manufacture or the nature of the raw materials used or of any other circumstances which may alter the nature and composition of the discharge or may result in the permanent cessation of the discharge.

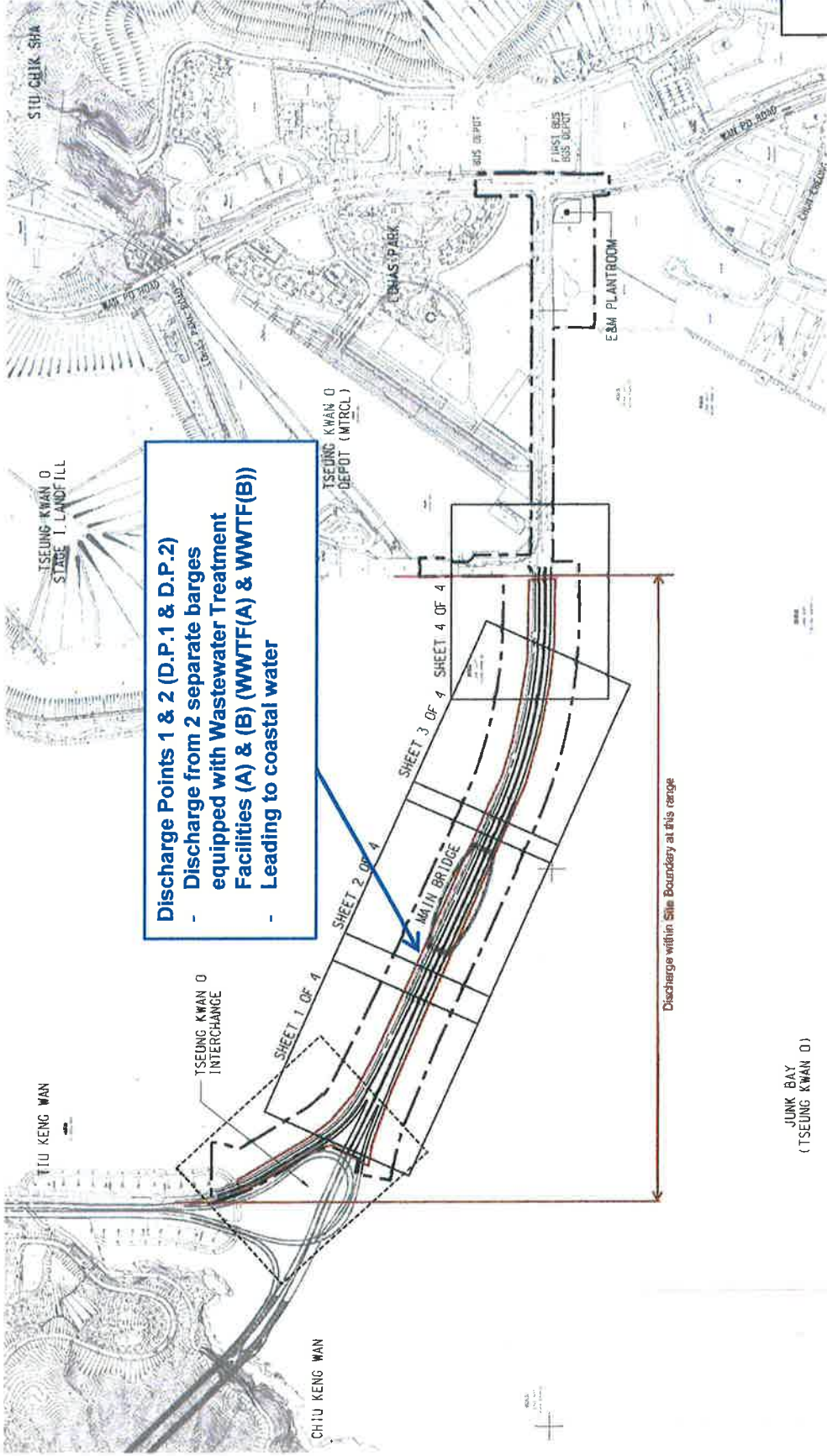
倘若持牌人更改或擬更改其廢水處理設施、生產程序、或所用原料的性質、或有其他足以改變其排放的性質及成份或可導致永久性終止排放的事情，必須在 14 日內以傳真（傳真號碼：2756 8588）或電郵（電郵地址：hotline_e@epd.gov.hk）書面通知監督：環境保護署署長，區域辦事處(東) 西貢區。

Notes 附註

- (a) For the purposes of determining compliance with the limits stated in Specific Condition B1, samples shall be taken by the duly authorized officer(s) of the Authority at the Sampling Point(s) or any other points from which the samples so taken are regarded by the duly authorized officer(s) as being representative of the quality of the discharge. When any single sample analyzed for a determinand is proved not complying with corresponding limit set out in the table, the discharge is deemed to have failed to comply with Specific Condition B1.
為確定排放是否符合特別條件第 B1 項內所列的限度，獲監督授權的人員須在取樣點或在認為可以抽取到具代表性的樣本的任何其他位置抽取樣本。只要在任一個經分析的樣本中，證實任一個測量物不符合表中所列的相應限度時，排放即被視為不符合特別條件第 B1 項。
- (b) An example of proper disposal method for sludge is sending dewatered sludge to landfill for disposal.
妥善棄置污泥方法中的一個例子是將脫水後的污泥運往堆填區棄置。
- (c) Proper disposal of grease trap waste includes but is not limited to employing registered grease trap waste collector to conduct the disposal work. All registered collectors should have a Certificate of Registration issued by the Environmental Protection Department. The most updated list of the registered collectors can be obtained from the Environmental Protection Department.
妥善的隔油池廢物棄置方法包括卻不限於聘用已登記的隔油池廢物收集商進行有關的棄置工作。所有已登記的隔油池廢物收集商，均領有由環境保護署發出的登記證明書。已登記的隔油池廢物收集商最新名單，可向環境保護署索取。
- (d) The Licensee may make reference to Annex 1 of the <Technical Memorandum on Effluent Standards> for analytical methods used by the Government Chemist.
持牌人可參照「流出物標準技術備忘錄」附件 1 有關政府化驗師所採用的分析方法。
- (e) The Licensee shall keep this licence in the premises and make it available at all times for inspection by duly authorized officer(s) of the Authority.
持牌人須在處所內保存此牌照，以備獲監督授權的人員隨時查閱。
- (f) (i) The Licensee shall allow duly authorized officer(s) of the Authority to enter the premises for the purposes of inspection, sampling, records examination or any other duties authorized by Section 37 and Section 38 of the Ordinance.
持牌人須准許獲監督授權的人員進入處所內進行檢查、抽取樣本、審查紀錄或執行其他根據本條例第 37 及第 38 條所授權的職務。
(ii) Where the premises has security measures in force which would require proper identification and clearance before entry, the Licensee shall make necessary arrangements such that upon presentation of evidence of identity and of authorization, duly authorized officer(s) will be permitted to enter, without delay, for the purposes of performing duties.
倘若由於處所的保安理由而需先行鑑定來人的身份，持牌人必須作出必要的安排，以便獲授權人員在出示身份證明及授權文件後，即可內進執行其職務而不致受延誤。
- (g) (i) For a licence granted under Section 15 of the Ordinance, the Licensee may, not less than 2 months before expiry of the licence, apply under Section 19 of the Ordinance for a new licence. The Authority may grant the licence or otherwise.
持有根據本條例第 15 條所批給牌照的人士，可於牌照屆滿前不少於 2 個月內，根據本條例第 19 條的規定，申請一面新牌照。監督可批給或拒絕批給牌照。
(ii) For a licence granted under Section 20 or 23A of the Ordinance, the Licensee may, not more than 4 months and not less than 2 months before expiry of the licence, apply under Section 23 or 23A respectively of the Ordinance for renewal of licence. The Authority may renew the licence or otherwise.
持有根據本條例第 20 條或第 23 A 條所批給牌照的人士，可於牌照屆滿前不多於 4 個月及不少於 2 個月內，根據本條例的第 23 或 23 A 條的規定，申請牌照續期。監督可將牌照續期或拒絕將牌照續期。
- (h) Under Section 24 of the Ordinance, the Authority may by notice in writing, impose new or amended terms and conditions on this licence or cancel this licence. Under Section 25, 26 and 27 of the Ordinance, a Licensee whose licence has been so varied or cancelled may be entitled to compensation.
根據本條例第 24 條的規定，監督可以書面通知，向本牌照施加新訂或經修訂的條款及條件，或取消本牌照。根據本條例第 25、26 及 27 條的規定，被更改或取消牌照的持牌人可能會獲得補償。
- (i) Under Section 28 of the Ordinance, the Licensee may apply to the Authority for a variation of this licence.
根據本條例第 28 條的規定，持牌人可向監督申請更改本牌照。
- (j) Under Section 49 of the Ordinance, this licence shall not be construed as a dispensation from the requirements of any other Ordinance except where that other Ordinance so provides.
根據本條例第 49 條的規定，本牌照並不得解釋為豁免符合任何其他條例的規定，除非該其他條例如此訂定。
- (k) The licensee should ensure good practice is carried out in dealing with discharges from the construction site. The licensee should make reference to the EPD's Practice Note for Professional Persons, No. PN 1/94, "Construction Site Drainage."
持牌人須確保妥善處理地盤之去水排放。持牌人可參考環保署印發之 Practice Note for Professional Persons, 編號 PN 1/94, "Construction Site Drainage"

Annex I

附件 I



Construction Site

Title: Construction Site Boundary and Discharge Points 1 & 2 (D.P.1 & D.P.2)

標題: 建築地盤範圍及排放點1及2 (D.P.1及D.P.2)

Construction Site of Cross Bay Link, Tseung Kwan O - Main Bridge and Associated Works – Marine Works Area, Tseung Kwan O, N.T. (CEDD Contract No. NE/2017/07)
 新界將軍澳「將軍澳跨灣連接路－主橋及相關工程－海事工程」之建築地盤（土木）工程拓展署合約編號 NE/2017/07

Annex to licence No.: **WT00032842-2018**

牌照編號 **WT00032842-2018** 的附件

Date: **November 2018**
 日期:

Scale: **NTS**
 比例: 不按比例

ENVIRONMENTAL PROTECTION DEPARTMENT,
 HONG KONG
 REGIONAL OFFICE (EAST)

香港環境保護署
 區域辦事處(東)



Annex II

附件 II



Sampling Point 1 (S.P.1) at sampling valve of the discharge outlet of Wastewater Treatment Facility (A)
取樣點 (S.P.1) 位於廢水處理設施 (A) 出水口的取樣閥

Wastewater Treatment Facility (A)

Title: Wastewater Treatment Facility (A) and Sampling Point (S.P.1)
標題: 廢水處理設施 (A) 及取樣點 (S.P.1)

Construction Site of Cross Bay Link, Tseung Kwan O - Main Bridge and Associated Works - Marine Works Area, Tseung Kwan O, N.T.
(CEDD Contract No. NE/2017/07)
新界將軍澳「將軍澳跨灣連接路 - 主橋及相關工程 - 海事工程」之建築地盤 (土木
工程拓展署合約編號 NE/2017/07)

Annex to licence No.: **WT00032842-2018**

牌照編號 **WT00032842-2018** 的附件

Date: **November 2018**
日期:

Scale: **NTS**
比例: 不按比例

ENVIRONMENTAL PROTECTION DEPARTMENT,
HONG KONG

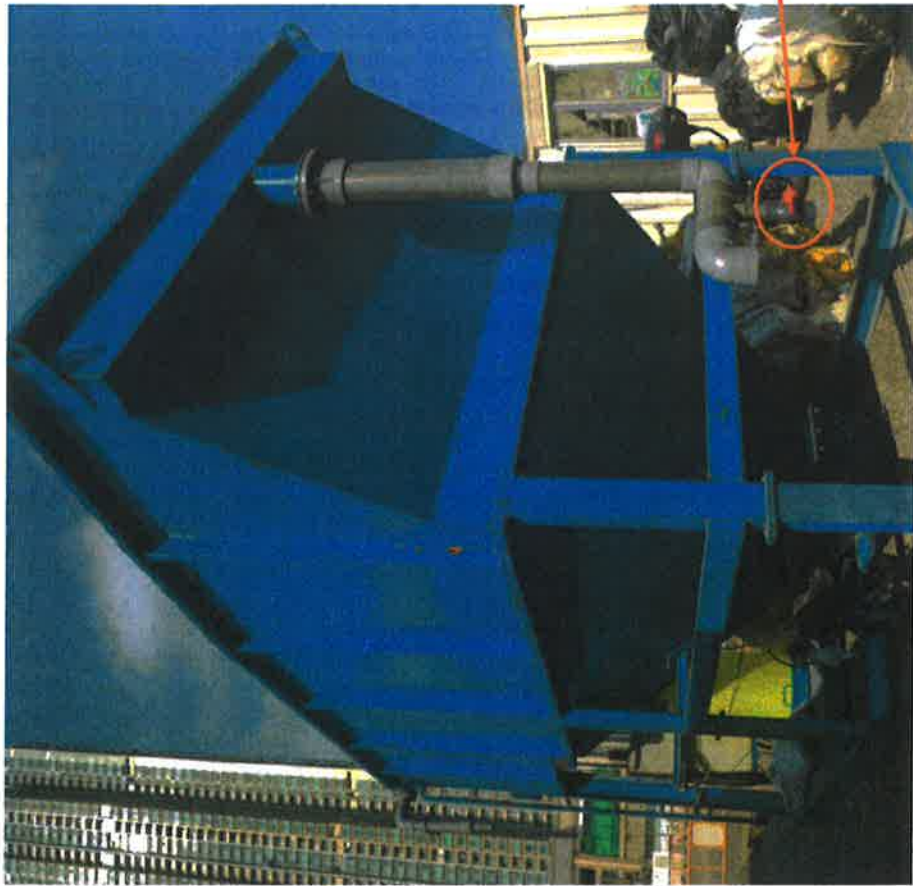
REGIONAL OFFICE (EAST)

香港環境保護署
區域辦事處(東)



Annex III

附件 III



Sampling Point 2 (S.P.2) at sampling valve of the discharge outlet of Wastewater Treatment Facility (B)
取樣點 (S.P.2) 位於廢水處理設施 (B) 出水口的取樣閥

Wastewater Treatment Facility (B)

Title: **Wastewater Treatment Facility (B) and Sampling Point (S.P.2)**

標題: 廢水處理設施 (B) 及取樣點 (S.P.2)

Construction Site of Cross Bay Link, Tseung Kwan O - Main Bridge and Associated Works - Marine Works Area, Tseung Kwan O, N.T.

(CEDD Contract No. NE/2017/07)

新界將軍澳「將軍澳跨灣連接路－主橋及相關工程－海軍工程」之建築地盤 (土木
工程拓展署合約編號 NE/2017/07)

Annex to licence No.: **WT00032842-2018**

牌照編號 **WT00032842-2018** 的附件

Date: **November 2018**
日期:

Scale: **NTS**
比例: 不按比例

ENVIRONMENTAL PROTECTION DEPARTMENT,
HONG KONG

REGIONAL OFFICE (EAST)

香港環境保護署
區域辦事處(東)



**ANNEX 3
REVISED NOISE MITIGATION PLAN
(REVISION 5, UNDER CONTRACT
NE/2017/07)**



Civil Engineering and Development Department
East Development Office
8/F, South Tower, West Kowloon Government Offices
11 Hoi Ting Road
Yau Ma Tei
Kowloon

Your reference:

Our reference: HKCEDD08/50/107751

Date: 7 January 2022

Attention: Mr Lo Sai Park, Sunny

BY FAX & POST
(Fax no.: 2739 0076)

Dear Sirs

Agreement No.: NTE 06/2016
Independent Environmental Checker for Tseung Kwan O – Lam Tin Tunnel
Noise Mitigation Plan for Entrustment Works under CBL

We refer to emails of 31 December 2021 and 7 January 2022 from AECOM/China Road and Bridge Corporation attaching the Noise Mitigation Plan (Revision No. 5) for Entrustment Works under CBL.

We have no further comment and hereby verify the captioned plan in accordance with Clause 2.5 of the Environmental Permit no. EP-458/2013/C.

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Edric Lau on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LCCR/LTKE/lsmt

cc AECOM – Mr Kelvin Chan (email: kelvin.Chan@cb11-aecom.com)
Cinotech – Dr H F Chan (email: hf.chan@cinotech.com.hk)
CRBC – Mr Calvin So (email: calvin.so@crbc.com.hk)

Our Ref: MA16034/Corres/Out/my211231

Civil Engineering and Development Department
East Development Office
East Division 1
Project Division (1)
8/F, South Tower, West Kowloon Government Offices,
11 Hoi Ting Road,
Yau Ma Tei, Kowloon

By E-Mail
31st December 2021

Attn: Mr. LO Sai Park, Sunny

Dear Mr. Lo,

Agreement No. CE 59/2015 (EP)
Environmental Team for Tseung Kwan O – Lam Tin Tunnel - Design and Construction
(Environmental Permit (EP) No. EP-458/2013/C)
Contract No. NE2017/07 –Noise Mitigation Plan (Rev. 5)

We refer to the Noise Mitigation Plan (Revision 5) submitted by China Road and Bridge Corporation on 29th December 2021 via email.

We are pleased to inform you that we have no further comment on your plan with reference to the approved Noise Mitigation Plan (Revision 5).

Should you have any queries, please contact our Ms. Karina Chan at 2151 3880 or the undersigned at 2151 2083.

Yours faithfully,

For and on behalf of
Cinotech Consultants Limited



Dr. H.F Chan
Environmental Team Leader

c.c. AECOM
AECOM
ANewR
CRBC

Mr. Kelvin Chan
Ms. Jannifer Chan
Mr. James Choi
Mr. Calvin So

By E-mail
By E-mail
By E-mail
By E-mail



Contract No:

NE/2017/07

Project Title:

Cross Bay Link, Tseung Kwan O,

Main Bridge and Associated Works

Noise Mitigation Plan

Document No:

Revision: 5

Date: 28 Dec 2021

Prepared by:

Calvin So

Environmental Officer

Endorsed by:

Raymond Suen

Site Agent



Content

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List of Appendices

Appendix A	Site Layout
Appendix B	Tentative Construction Programme
Appendix C	Environmental Mitigation Implementation Schedule (EMIS)

1.0 Background

1.1 Project Description

The Civil Engineering and Development Department of the Hong Kong Special Administrative Region (hereinafter referred as 'the Client') plans to construct a TKO Interchange which is a dual two-lane carriageway connecting TKO-LT Tunnel to TKO area. The viaduct section of Entrustment Works has a cycle track and footpath in addition to the road carriageway. The Project is a designated project under Part I of Schedule 2 to the Environmental Impact Assessment Ordinance (Cap. 499)

The Works to be executed under this Contract No. NE/2017/07 include, but not exclusively, the following items:

- A. Access to any Part of the Site;
- B. Provision of the Project Manager' s Site Accommodation referred to in PS Clause 1.49 a wheel washing system according to PS Appendix 1.33;
- C. Application of Marine Department Notice (MDN) for marine works from the authorities;
- D. Requirements of various submissions on environmental aspects before commencement of and during construction of the works as stated in the Particular Specification, including but not limited to, the Environmental Management Plan referred to in PS Clause 1.130
- E. Requirements to provide, maintain and remove environmental mitigation and monitoring measures under the Environmental Monitoring and Audit programme;
- F. Design and submission of Contractor' s Designs including alternative design (if any), and the process of review and acceptance by the Project Manager and the authorities;
- G. Prefabrication of bridge segments and bridge girder and its transportation to site;
- H. Prefabrication of elements of steel arch bridge;
- I. Setting up of construction plant and temporary works for construction of each bridge required under this contract including piles, pile caps, piers, erection / assembly of bridge superstructure;
- J. Removal of temporary works and accesses;
- K. Erection of isolation panels and steel parapets;
- L. Installation of road lightings and functional lighting;
- M. Procurement, factory acceptance test, delivery, temporary storage, safety measures



- in the installation of E&M works, testing and commissioning of E&M works;
- N. FSD' s agreement and confirmation on the arrangement and schedules of fire service inspection to the E&M works;
 - O. Roadworks and signage installation;
 - P. Landscaping works and its establishment;
 - Q. Interfacing works with CEDD' s contracts of the Tseung Kwan O – Lam Tin Tunnel project and CEDD' s other contract of Cross Bay Link, Tseung Kwan O including the requirements to share Working Areas to other contractors to enter and/or work as stated in GS and PS Clauses 1.27, 1.31A and 1.45; and
 - R. Liaison and coordination with the stakeholders.

The Site Layout showing the site boundary is shown in **Appendix A**.

1.2 Requirements for Noise Mitigation Plan (NMP)

According to the condition 2.5 of the EP-458/2013/C, the Permit Holder shall, no later than one month before the commencement of construction of the Project, submit to the Director of Environmental Protection (DEP) for approval three hard copies and two electronic copies of Noise Mitigation Plan (NMP) detailing the temporary and permanent mitigation measures for the construction and operation phases traffic noise impacts arising from the Project. All noise mitigation measures implemented shall be properly maintained during construction phase of the Project.

The NMP shall include:

- A layout plan to show the location of major construction activities;
- A construction programme
- A powered mechanical equipment (PME) list for the proposed construction works;
- A proposal for method of working and sound-reducing measures for all equipment;

All measures recommended in the approved NMP will be fully and properly implemented during the construction phase of the Project.

The Project Manager will review the construction programme and list of PMEs from time to time, which formed the basis of construction noise assessments, to be practicable and reasonable.

2.0 Description of Construction Works in the Study Area

2.1 Noise Sensitive Receivers NSRs

No NSR has been identified within the assessment area (a distance of 300m from the project boundary) shown as *Appendix A*.

Construction Activities and Powered Mechanical Equipment

The major construction works for Entrustment Works would include the following activities:

1. Install piles by marine piling rigs;
2. Build pile caps;
3. Build piers
4. Erect concrete deck segments of the approach; and

These construction activities will involve the use of Powered Mechanical Equipment (PME) including dump barge, derrick barge, piling rig, drilling rig, etc. The Sound Power Level (SWL) for the PMEs have been adopted from EPD' s Technical Memorandum on Noise from Construction Work Other than Percussive Piling (GW-TM), list of SWLs of other commonly used PME or British Standard BS 5228-1:2009. It should be noted that the PMEs to be adopted for individual construction activities are provided in the table below.

PME	TM or other reference	Sound Power Level (SWL) (dB)	No. of PME	Noise Mitigation Measures
1 Piling Works, Pile Cap & Piers				
Air Compressor, air flow > 10m ³ /min and < 30m ³ /min	CNP 002	102	4	-
Crane, mobile/barge mounted (diesel)	CNP 048	112	1	Barrier
Derrick barge	CNP 061	104	2	-
Generator, silenced, 75dB(A) at 7m	CNP 102	100	2	Barrier
Water pump (electric)	CNP 281	88	4	-
Tug boat	CNP 221	110	2	-
Concrete lorry mixer	CNP 044	109	8	-
Drill rig, rotary type (diesel)	CNP 072	110	4	-
Roro barge	-		2	-
2 Bridge Deck Construction				
Generator, silenced, 75dB(A) at 7m	CNP 102	100	3	Barrier



	Derrick barge	CNP 061	104	2	-
	Tug boat	CNP 221	110	2	-
	Roro barge	-		2	-
	Concrete lorry mixer	CNP 044	109	8	-
3	Roadworks, Drainage and Utilities				
	Generator, silenced, 75dB(A) at 7m	CNP 102	100	2	Barrier
	Asphalt paver	CNP 004	109	1	-
	Roller, vibratory	CNP 186	108	1	-

Remarks: No Other Reference is made

Remarks: Site Engineer confirmed that the plant inventory shown is reasonable and practicable for completing the Project within the scheduled timeframe

2.2 Construction Programme

The tentative construction programme showing the construction period of Entrustment Works is attached in *Appendix B*. This will be updated on a monthly basis for the duration of the construction works in corresponding work activities.

2.3 Operation Phases Traffic Noise Impacts

For traffic noise was predicted using the methodology provided in the UK Department of Transport Calculation of Road Traffic Noise (CRTN) 1988. The assessment was based on projected peak hour flows for the worst year within 15 years after opening of the road. Road traffic noise levels is presented in terms of noise levels exceeded for 10% of the one-hour period during the peak traffic flow, i.e. L10,1hr dB(A). The projected 2036 peak hour traffic flows and vehicle compositions which have been agreed by Transport Department (TD) as stated in the EIA report section 4.5.

As mentioned in the section 2.1, none of the NSR is identified within the 300m study area for this project and therefore it is considered the project has insignificant noise impact to the NSR. As the result, no direct mitigation such as noise barrier would be needed for the operation phase.

3.0 Proposal for Method of Working and Sound-reducing Measures for All Equipment to be used on Site

Good site practice and noise management techniques could considerably reduce the noise

impact from construction site activities. The following measures should be followed during each phase of construction:

Only well-maintained plant should be operated on-site and the plant should be serviced regularly during the construction programme (N1);

Machines and plant (such as trucks, cranes) that are in intermittent use should be shut down between work periods or should be throttled down to a minimum(N1);

Noise barrier will be used for noisy plants such as crane barge. Movable temporary noise barriers that can be located close to noisy plant and be moved iteratively with the plant. The noise source from the barge mainly is the operation of the barge's winch, noise barrier will be erected surrounding the winch to mitigate the noise. The noise barrier will be made of minimum 50mm thick sound absorbing lining and minimum 10mm thick plywood (N4).

All the mitigation measures are summarized in the S6.6.4.3 to 11 of Environmental Mitigation Implementation Schedule (EMIS) of EM&A Manual and attached in *Appendix C* for reference.

4.0 Concurrent Construction Works

Until Oct 2020, it is noted that three concurrent construction works as stated below:

Table 4.1 Concurrent Construction Works

Contract No.	Project Title
NE/2015/01	Tseung Kwan O – Lam Tin Tunnel – Main Tunnel and Associated Works
NE/2015/02	Tseung Kwan O – Lam Tin Tunnel – Road P2 and Associated Works
NE/2017/01	Tseung Kwan O – Lam Tin Tunnel – Tseung Kwan O Interchange and Associated Works

5.0 Conclusion

The noise mitigation plan summarized different construction work activities in different stage during the whole construction period. The potential construction noise impacted of various noise mitigation measures from the selected PME will be minimized the cumulative noise level.

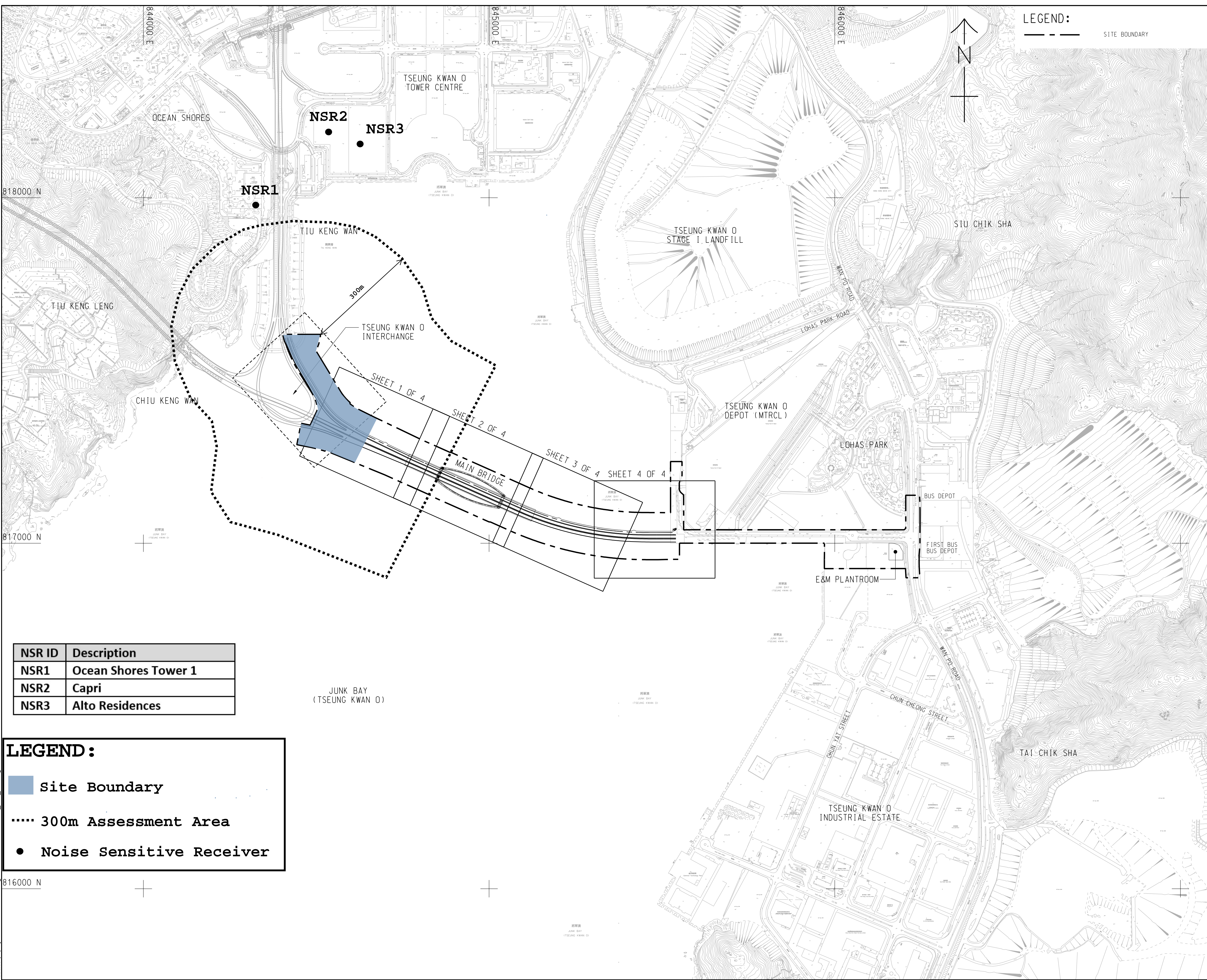
With the implementation of the proposed mitigation measures, the potential noise impacts would comply with EIA noise criteria (Annex 13 in Technical Memorandum on Environmental Impact Assessment Process: *5.3 The assessment shall be based on standard acoustic principles. In case the proponent or consultant would like to assess whether a Construction Noise Permit (CNP) could be issued or not in the context of programming construction works, reference should be made to the relevant technical memoranda issued under the Noise Control Ordinance (NCO): the Technical Memorandum on Noise from Percussive Piling, the Technical Memorandum on Noise from Construction Work other than Percussive Piling, and the Technical Memorandum on Noise from Construction Work in Designated Areas. Where no sound power levels can be found in the Technical Memoranda, reference shall be made to BS 5228 Part 1 or noise emission levels measured in previous projects in Hong Kong.*).

Where necessary, further review and updated will be performed during the construction and liaison with affected parties is recommended to minimize the construction phase' s noise impacts as far as practicable.

Appendix A

Site Layout

Project Management Initials:
 Designer: WIN
 Checked: RPCM
 Approved: CWN
 ISO A1 594mm x 841mm



LEGEND:
 - - - - SITE BOUNDARY



PROJECT
 項目
CROSS BAY LINK, TSEUNG KWAN O

CONTRACT TITLE
 CROSS BAY LINK, TSEUNG KWAN O
 MAIN BRIDGE AND ASSOCIATED WORKS

CLIENT
 業主
 土木工程拓展署
 Civil Engineering and
 Development Department

CONSULTANT
 工程顧問公司
 AECOM Asia Company Ltd.
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 分判工程顧問公司

ISSUE/REVISION
 修訂

I/R	DATE	DESCRIPTION	CHK.
-	DEC.17	TENDER DRAWING	RPCM

STATUS
 階段

SCALE
 比例
 A1 1 : 5000

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號
 60329339

CONTRACT NO.
 合約編號
 NE/2017/07

SHEET TITLE
 圖紙名稱
 KEY PLAN AND LOCATION PLAN

SHEET NUMBER
 圖紙編號
 60329339/C1/C00/1000

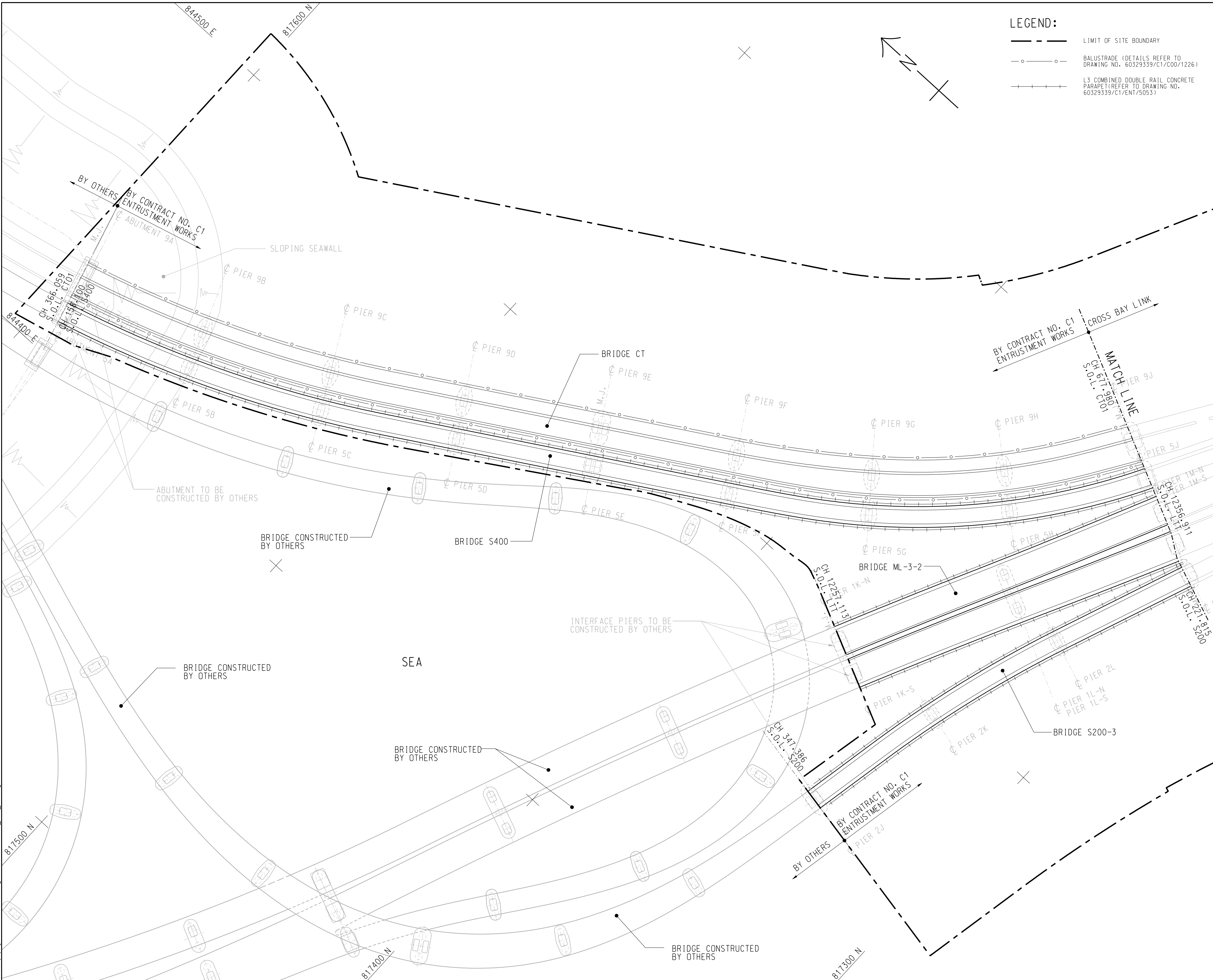
NSR ID	Description
NSR1	Ocean Shores Tower 1
NSR2	Capri
NSR3	Alto Residences

LEGEND:

- Site Boundary
- 300m Assessment Area
- Noise Sensitive Receiver

Plot File by: HUPF
 PATH: P:\Projects\60329339\Drawing\CONTRACT\C1\1000\C1_C00_1000.dgn
 2017/12/28

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CONTRACT TITLE
 CROSS BAY LINK, TSEUNG KWAN O
 MAIN BRIDGE AND ASSOCIATED WORKS

CLIENT
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 Civil Engineering and
 Development Department

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ISSUE/REVISION
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I/R	DATE	DESCRIPTION	CHK.
-	DEC.17	TENDER DRAWING	RPCM

STATUS
 階段

SCALE
 比例
 A1 1 : 500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

PROJECT NO.
 項目編號
 60329339

CONTRACT NO.
 合約編號
 NE/2017/07

SHEET TITLE
 圖紙名稱
 STREET FURNITURE

SHEET NUMBER
 圖紙編號
 60329339/C1/ENT/4211

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Appendix B

Tentative Construction Programme

Appendix C

Environmental Mitigation Implementation Schedule (EMIS)



Reference No.	Environmental Protection Measures/Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation Agent	Implementation Stage	Requirements and/or Standards to be Achieved
N1	<p>Good site practice and noise management techniques:</p> <ul style="list-style-type: none"> • Only well-maintained plant shall be operated on-site and the plant shall be serviced regularly during the construction programme; • Machines and plant (such as trucks, cranes) that are in intermittent use shall be shut down between work periods or throttled down to a minimum; • Plant known to emit noise strongly in one direction, where possible, shall be orientated so that the noise is directed away from nearby NSRs; • Silencers or mufflers on construction equipment shall be properly fitted and maintained during the construction works; • Mobile plant shall be sited as far away from NSRs as possible and practicable; and • Material stockpiles, site office and other structures shall be effectively utilised, where practicable, to screen noise from on-site construction activities. 	To minimise construction noise impact arising from the Project on the affected NSRs	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • Annex 5, TM-EIAO
N2	Use of quiet powered mechanical equipment and working methods	Reduce noise levels of plant items	All construction sites	Contractor	Construction stage	<ul style="list-style-type: none"> • Annex 5, TM-EIAO



Reference No.	Environmental Protection Measures/Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to Address	Location/ Timing	Implementation Agent	Implementation Stage	Requirements and/or Standards to be Achieved
N3	Install site hoarding at the site boundaries between noisy construction activities and NSRs	Reduce the construction noise levels at low-level zone of NSRs through partial screening	All construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
N4	Use of temporary or movable noise barriers and full enclosure for relatively fixed plant source	Screen the noisy plant items to be used at all construction sites	For plant items listed in Table 6.7 and Appendix 6.1 of the EIA report at all construction sites	Contractor	Construction stage	• Annex 5, TM-EIAO
N5	Implement a noise monitoring programme under the EM&A manual	Monitor the construction noise levels at the selected representative locations	Selected representative noise monitoring stations (Drawing no. 209506/EMA/NS/001 & 209506/EMA/NS/002)	Constructor	Construction stage	• Annex 5, TM-EIAO